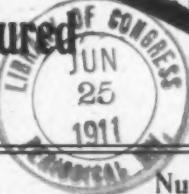


Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials



Volume X.

CHICAGO, ILL., JUNE 22, 1911.

Number 12.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electrod" Brands Ready Roofing. Get our prices.

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DEXTER Portland Cement
THE NEW STANDARD

Sole Agents SAMUEL H. FRENCH & CO., Philadelphia

**UNION MINING COMPANY**

Manufacturers of the Celebrated

MOUNT SAVAGE
FIRE BRICK
GOVERNMENT STANDARD

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and
Cement Kiln
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

**UNION MINING CO.,
Mount Savage, Md.**

CAPACITY, 60,000 PER DAY.
ESTABLISHED 1841.



Phoenix Portland Cement UNEXCELED FOR ALL USES.
Manufactured by
PHOENIX PORTLAND CEMENT CO.
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Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

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YOU know what the linings for your cement and lime kilns cost per thousand brick but do you know how much per ton output? That is the cost that is vital, that's why we are anxious you should know. Write us.

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CAPACITY
1,000,000 BARRELS
YEARLY



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Manufacturers of the
Celebrated Limestone Brand of Portland Cement

Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years.
Cement as finely ground as any on the market.
Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.
Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry., or Ohio River.
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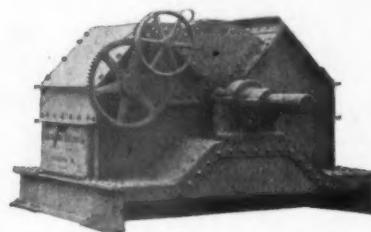
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For Pulverizing Lime-
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Main frame of steel; "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.
No other Hammer Crusher has such a big Safety Factor.



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Stone Crushing Cement and Power Plants

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Strongest and Best



Uniform Cement is what you want. A cement which will always be the same today, tomorrow or next year. Lehigh cement is always uniform, because no matter whether it is made in our Eastern or Western mills, the same high standard of manufacture is observed. Our facilities for shipping are the best. With 11 mills scattered throughout the country, and a capacity of 11,000,000 barrels annually we can make delivery at a moment's notice.

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Head Office: Main Western Office:
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"THE BEST IS NONE TOO GOOD"
HIGHEST GRADE of
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Every Barrel Absolutely Uniform.

R. R. facilities especially adapted
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Capacity 1,500,000 bbls. Yearly.

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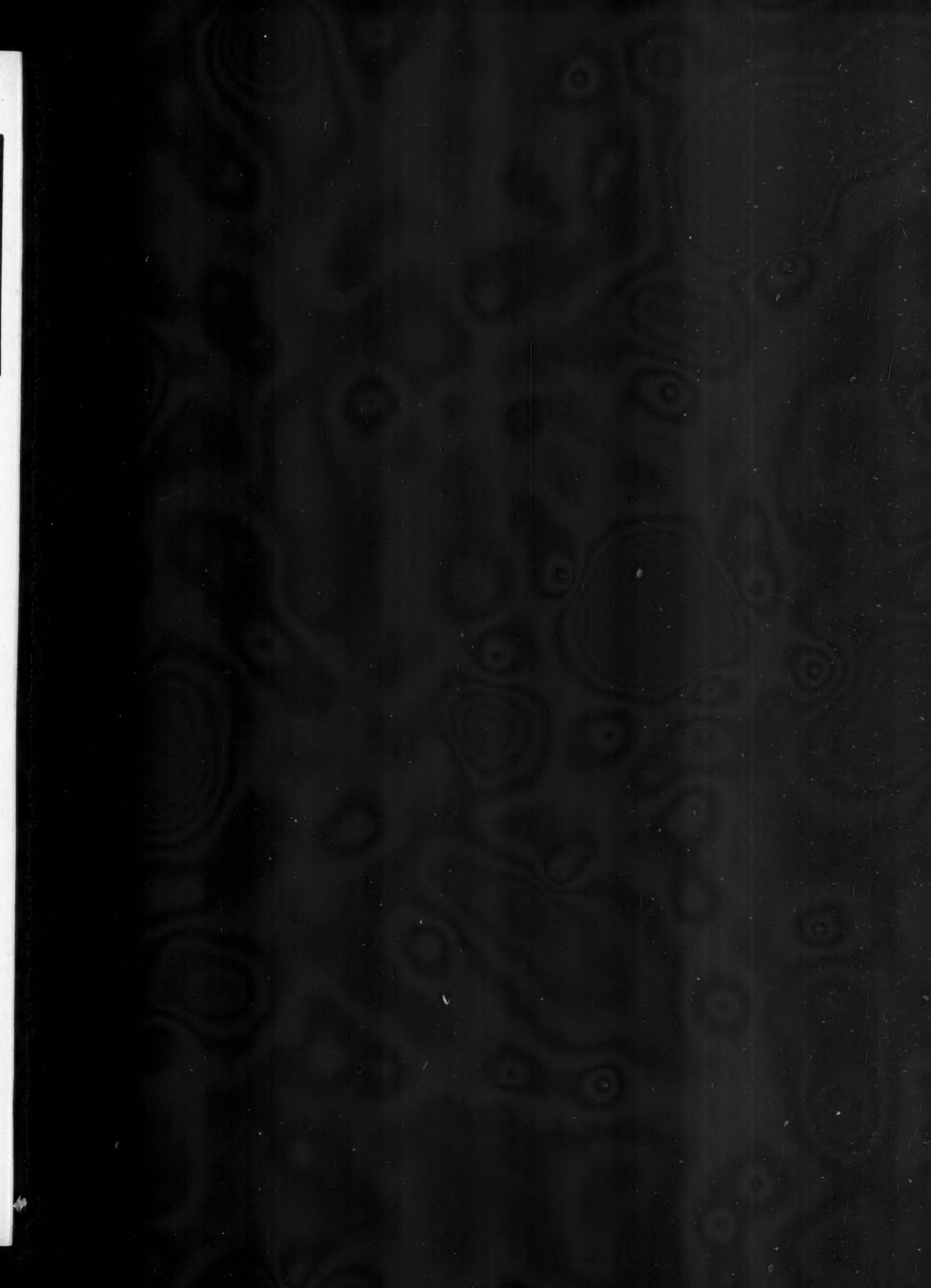
There's one "best" in every line, but that is not always best for everyone concerned. In the building trades

Ricketson's Mineral COLORS

are acknowledged to be the best choice for everybody. Best for the architect because purest. Best for the contractor because they go farther. Best for the owner because they never change their color.

For Mortar, Brick, Cement, Stone, Etc.
Red, Brown, Buff, Purple and Black

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Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume X

CHICAGO, ILL., JUNE 22, 1911

Number 12

THE ANNUAL GOOD ROADS CONGRESS

Birmingham the Scene of the Most Largely Attended and Most Enthusiastic Meeting Ever Held—
Many Men of Prominence Lend Their Presence.*

Amid the flying flags and bunting of a decorated city and the welcoming speeches of its distinguished citizens, the fourth annual assembly of the National Goods Roads Congress was ushered into existence. Never in the history of this organization was there held a more successful convention and the one thousand or more delegates in attendance overbubbled with enthusiasm regarding the prospects of achieving their aim, which is to see good roads in every part of the United States.

The sessions were not only made interesting by the amount and character of the work accomplished but also by the delightful social features for which the South is so justly famous. In fact, the stay of the delegates in this city was one great round of entertainments, which will be hard to ever forget. The arrangements were well nigh perfect, and much credit is due to J. A. Rountree, the most efficient and genial secretary of the congress, who worked day and night with ceaseless energy for the welfare of the delegates.

The sessions of the congress were held in the Jefferson Theater, the auditorium of which was divided into sections for delegates from the different states, while the stage was utilized as a rostrum for the speakers. About half a block distant were the headquarters of Miss Alma Rittenberry. Here in addition to the information bureau were located the exhibits of the different manufacturers of road machinery and accessories, which were most instructive.

FIRST SESSION—FORENOON, MAY 23.

The first session of the fourth annual Good Roads Congress was called to order at 10:30 a. m. Tuesday morning, May 23, by John W. O'Neal, president of the Jefferson County Good Roads Association.

Rev. Raimundo De Vires opened the congress by invoking divine blessings on the members and their work.

Mr. O'Neal then made the opening address, saying in part: "To welcome you to this great state of Alabama I desire to present a man who stated a short time ago that his highest ambition during his administration was to leave a monument in the shape of good roads. Since he has been chief executive we have secured state aid for our counties and we have obtained a highway commission."

"I have the honor of introducing to you Alabama's best governor, the Honorable Emmet O'Neal."

Amid tremendous applause the chief executive of Alabama arose and delivered the following address of welcome:

GOVERNOR O'NEAL'S ADDRESS OF WELCOME

Delegates to the Fourth Annual Good Roads Congress, visiting governors, ladies and gentlemen: I congratulate

* Exclusive report by Ben S. Gross, special representative ROCK PRODUCTS.

you that the great movement you represent is daily growing in power and strength. I congratulate you that advocates of improved roads and highways in the nation, uninfluenced by the sneers or ridicule of the pessimist, have steadily, continuously and earnestly continued their campaign of education until they have broken down the walls of prejudice, and won converts by the irresistible weapons of logic and argument.

Your confidence and zeal in the great movement was not affected by the false claim that the proposed reform would impoverish the states or bankrupt the nation. Your answer was that the records of history and the lessons of experience had conclusively shown that the initial cost of improved or macadamized roads or highways had been inconsiderable in comparison with the enhanced value of real estate, and the progress and development of the resources and enterprises of the people which always followed in its wake.

The most dangerous foe to every movement of this kind has always been indifference as well as ignorance. We knew that our roads were bad, but we consoled ourselves with the thought that they might have been worse.

I congratulate you that since your last meeting the state of Alabama has abandoned its former policy and has established a highway commission and has placed the construction of our public roads under the supervision and management of a skilled, competent and experienced commission.

When I last had the honor of addressing a good roads convention in this city I pledged its delegates that the first act of my administration would be the establishment of a highway commission and the inauguration of a system of state aid for the improvement of our public roads.

I am gratified to be able to tell you that this pledge has been fulfilled.

The large number of applications pouring into the state highway commission for the appropriation of \$2,000, which the state will grant to any county expending a similar amount for public roads, is conclusive evidence that we have at last succeeded in arousing a public sentiment in road improvement which, in my opinion, result in the near future in lasting good.

Our people will not be satisfied with former conditions, and this movement will not stop until a system of improved highways radiate through every county in Alabama, and our commonwealth takes her place among the most advanced and progressive states of the Union.

Recent statistics show that in some sections one-half and in others at least a third of the taxable wealth of the states are found within the towns and cities. It is therefore evident that a system which exempted so large a proportion of the wealth and population of the country from the burden of road building and placed upon those dwelling in the rural districts—a portion of the community—the duty of building all the roads for all the people was unjust, unfair and inequitable.

Not only the state but the general government should bear its just proportion of road building.

The lessons of history teach us that no country has ever yet succeeded in constructing a system of well-improved roads without the assistance of the general government.

Notwithstanding the enormous sums which have been expended in the construction of railroads, our production has increased more rapidly than our methods of transportation. The question is, what can we, who dwell in a great republic, do to best promote its development? My answer is, by furnishing the people cheap improved and quick methods of transportation. We should not forget that over 90 per cent of the vast internal commerce of this country is moved first over the dirt roads, and that the construction of railroads only makes more necessary improved public highways.

The cost of transportation today over the unimproved roads of this country is from two to three times as much as the cost for similar tonnage over the improved roads of Europe, the average cost in this country being 25 cents per ton per mile as compared with about 8 cents per ton per mile over the macadamized and highly developed roads of Europe.

The system that has prevailed in this country has proven utterly inadequate. Vast sums of money have

been wasted owing to the fact that we entrusted the construction of our roads to men without experience or knowledge of road making or engineering skill.

Your labors have not been in vain; you have been the pioneers in a movement, the full fruition of which will entitle you to the thanks of generations yet unborn.

As chief executive of the state it is my duty as well as pleasure to extend to each and all of you a cordial and sincere welcome to a city whose proverbial hospitality and marvelous growth is known to all men. To the distinguished governors of other states who have honored us with their presence, and who have rendered such eminent and valuable services in the cause in which we are interested, for better civic conditions, for material progress and advancement, I extend the right hand of fellowship, and bid you welcome to a state which is not only first on the roll of the republic, but which is yet destined to become the theater of still greater achievements, and the home of a prosperous, enlightened and patriotic citizenship.

Governor O'Neal was followed by the Hon. Job Going, president of the Board of Revenue, who delivered the address of welcome on behalf of Jefferson county. His address, though brief, was full of good sentiment and was received with much applause. In his speech Mr. Going took occasion to extol the good roads movement and assured the delegates of the hearty co-operation of the people of the county.

Following this address Secretary Rountree read telegrams of regret at being unable to attend the congress from the following distinguished persons: Governors Wilson, of New Jersey; Mann, of Virginia; Gilchrist, of Florida; Smith, of Georgia; Harmon, of Ohio, and Hooper, of Tennessee.

On account of the absence of President Exum, Commissioner Weatherly extended a welcome for the city of Birmingham in a very witty manner, saying that the city was much honored by the presence of such a body of men within its confines.

Richard W. Massey welcomed the delegates on behalf of the Chamber of Commerce, and in his speech told the convention of the past, present and future greatness of Birmingham.

Other speeches of welcome were also delivered by John Craft on behalf of the Alabama Good Roads Association; by Judge W. I. Grubb on behalf of the Jefferson County Good Roads Association; by B. H. Cooper on behalf of the Board of Trade; by F. P. Chaffee on behalf of the Business Men's League; and by Dr. J. E. Dedman on behalf of the Birmingham Motor Club.

With the preliminary features of the session over, Chairman O'Neill turned the gavel over to the National president, the Honorable Arthur C. Jackson, of Chicago, who, on taking the gavel, said:

ADDRESS OF PRESIDENT ARTHUR C. JACKSON.

It has been my privilege to have been associated with many good roads conventions, and in all sincerity I can say that the congress just now beginning in this splendid city of Birmingham has greater possibilities for achievement than any other which has preceded it.

This is owing, first of all, to the untiring effort of our secretary, J. A. Rountree, who night and day has worked unceasingly to make this meeting a success. It

[Continued on Page 37.]

Power & Mining Machinery Co.

MILWAUKEE, WIS. U. S. A.

District Offices:

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Atlanta

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San Francisco

*"Half the size,
Half the weight;
Half the height,
Half the freight."*

TO WHICH MIGHT ALSO BE ADDED:

*"Half the efficiency,
Half the life;
Half the success,
Double the strife."*

All the above at the same price of a real crusher, too, such as the

"McCULLY CRUSHER"



McCULLY CRUSHERS ARE NOT SOLD BY RHYME BUT BY REASON

By reason of their unequaled capacity and wearing qualities on rock and ore of any degree of hardness, and
WITHOUT MELTING ANY BABBITT.

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By reason of their unequaled efficiency under any and all conditions of service.

By reason of their unequaled economy due to minimum power, oil and repairs required.

By reason of many other "reasons",—too numerous to mention here, but which are contained in our new Catalog No. 4-R which is just off the press.

DO YOU WANT IT? THEN SEND FOR IT. IT'S FREE.

Principal Products

ROCK CRUSHING MACHINERY

MINING AND SMELTING MACHINERY

CEMENT-MAKING MACHINERY

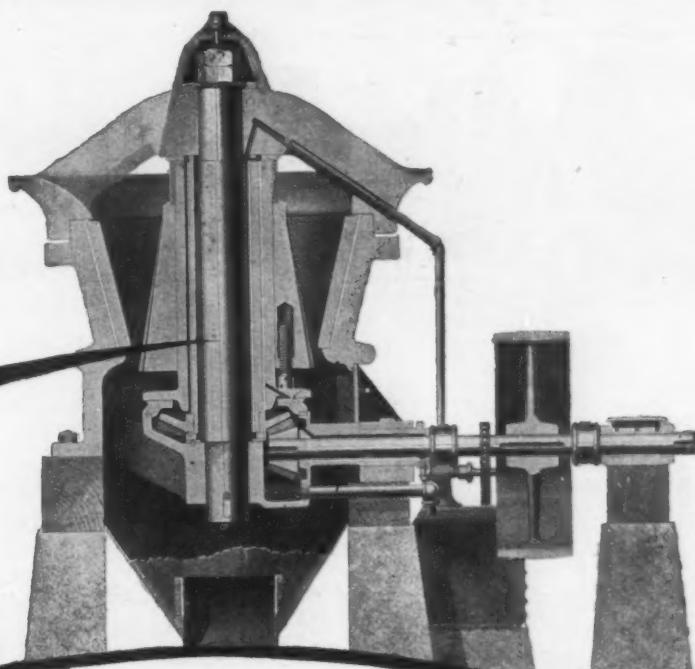
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POWER TRANSMITTING MACHINERY

LOOMIS-PETTIBONE GAS GENERATORS

SUCTION GAS PRODUCERS

Write for Catalogs on any of Above. Mentioning this Journal.



THIS RIGID CENTRAL SHAFT

is not merely suspended. It is not just supported. It is a big bolt—a short, thick steel forging of enormous strength, tying the stocky two-piece frame into a unit which not the hardest usage can break or budge. That big central bolt tells why the strongest crusher on the market is the

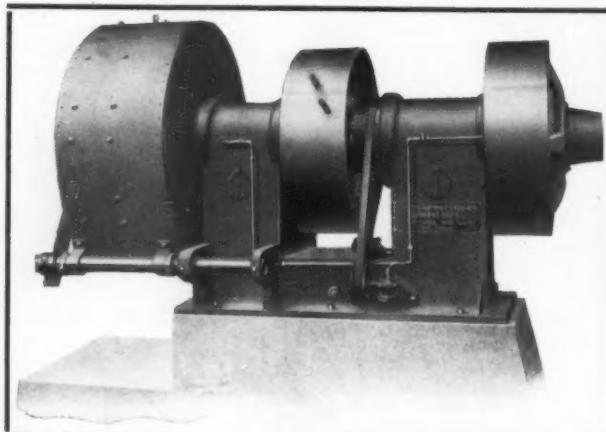
Symons Crusher

Look at that eccentric, encasing the shaft, and at the head-liner enclosing the eccentric. To break the shaft, you must also shear eccentric and head-liner. Note the great length and large diameter of the eccentric. Imagine the main bearings constantly drenched with oil—five gallons per minute if needed. Then calculate the area of the feed openings and don't forget, in figuring capacity, that the head moves as far at the top as at the bottom.

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1322 Majestic Building

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THE SYMONS DISC CRUSHER

MAKES THAT SMALL SIZED-PRODUCT

These Machines are now crushing trap rock, quartz, boulders, granite, ores, and limestone in many parts of the United States, Canada and Europe.

They follow gyratory or jaw breakers, reducing rejections at one operation to ANY SIZE desired down to 3-8 inch or even 5-16 inch.

UNRIVALLED IN CRUSHING GRAVEL

Greatest capacity; manganese equipped; easy running; simple; exceptionally durable.

To Watch Them in Operation Is to Be Convinced

Write for catalogue, and name of nearest user.

SYMONS BROTHERS

MAJESTIC BUILDING

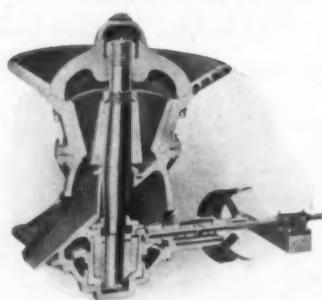
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ENGINEERS MANUFACTURERS

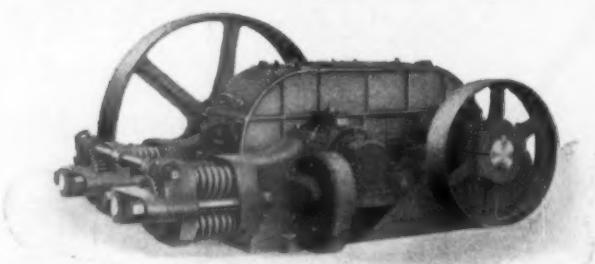
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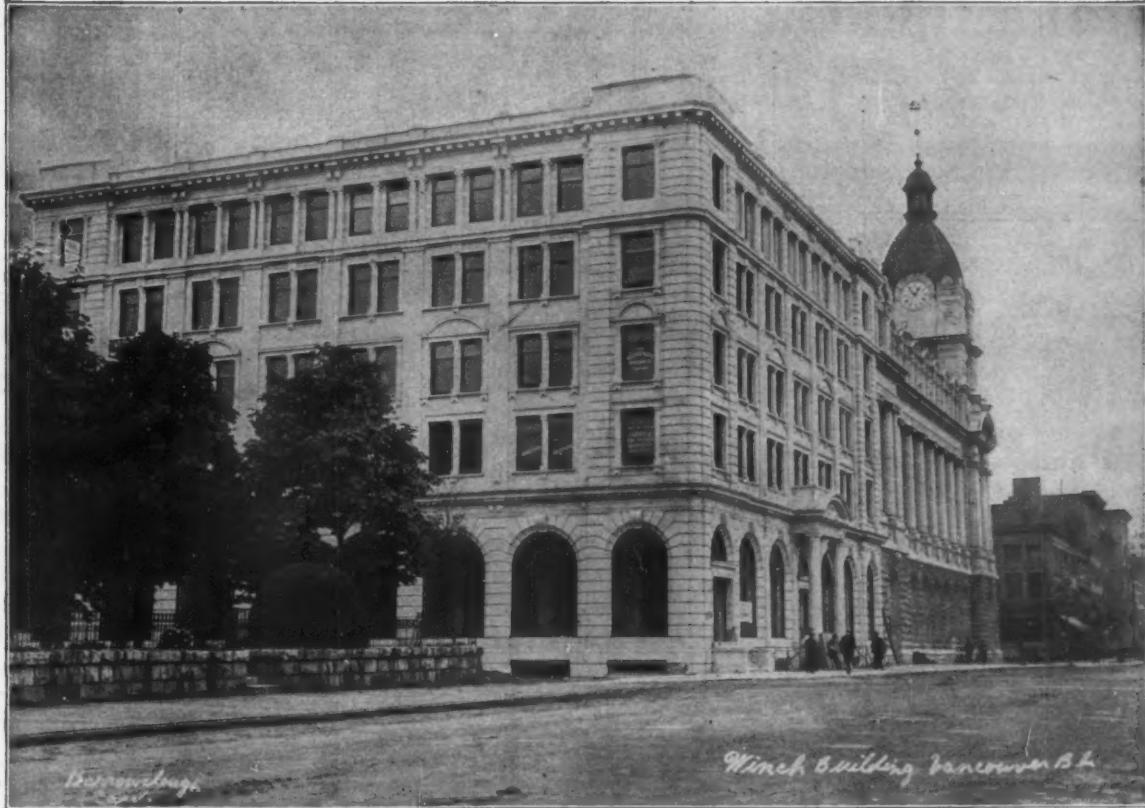
The Traylor Gyratory Crusher has a Running Reservoir of Oil encircling the full height of the Eccentric Bearing. Thus, a Perfect Cooling Agent.



The Traylor Crushing Roll is the only Roll manufactured with an Automatic Lateral Side Adjustment; thus, insuring long life and elimination of Corrugations on Roll Shells.

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Triangle Mesh Concrete Reinforcement



Winch Building, Vancouver, B.C.

Triangle Mesh reinforcement used.

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American Steel & Wire Co.

CHICAGO, NEW YORK, DENVER, SAN FRANCISCO.

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To Make Concrete and Stucco Buildings Waterproof and the Surface Color Uniform is Easy if You Use

Glidden's Liquid Cement

This material is a very high quality of cement incorporated with or carried into suspension by a waterproofing medium of unusual durability. It can be used either upon exterior or interior surfaces—it binds perfectly to a concrete surface, producing a beautiful, decorative effect. The serious drawback to the construction of cement and concrete buildings—their tendency to dry out with a variation of colors is done away with by this material. In addition, its waterproofing quality prevents the inroads of dampness in concrete walls and the consequent corrosion of the steel reinforcements.

Glidden's Liquid Cement is made in imitation of sandstone and also a variety of practical shades, including colonial and pompeian buffs, as well as clear white.

Glidden's Concrete Floor Dressing makes basement and cellar floors sanitary.

Let us send you booklet, color card and free sample for tests.

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The Glidden Varnish Company

Largest Manufacturers of Varnishes and Concrete Finishes in the World

BRANCHES:
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The Perfect Finish for all
Exterior Concrete Surfaces
SYMMENTREX
A Brick and Cement Coating
That Defies Time

ESPECIALLY ADAPTED FOR FLOORS.

It is water-resisting, sheds all moisture readily and adheres perfectly. It won't peel.

It makes a perfect bond with the concrete, becoming chemically a part of that material.

It is easily applied and economical.

Any color desired can be produced.

SYMENTRIN

is the ideal covering for

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It is easy to apply, has remarkable covering power, flows together freely and shows no laps or brush marks.

FELT LIKE EFFECT. BEAUTIFUL AS A WATER COLOR.

It is non-absorbent, sanitary, cleaned by washing. Can be applied to all surfaces.

One gallon of Symentrin will cover from 400 to 600 square feet according to the condition of the surface.

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BRICK AND CEMENT COATING

protects concrete or stucco walls, floors and ceilings against damage from moisture and does not destroy the pleasing texture of concrete or stucco. It has been endorsed by the National Board of Fire Underwriters as a fire retarder, has been applied with great success to the exteriors and interiors of residences, hotels, factories and mills; when applied on ceilings it does not drop off thus preventing damage to delicate machinery. It is not affected by acids or smoke.

FOR FLOORS

It prevents floors from dusting and sanding and is admirable for hospitals and similar institutions; will stand wear and washing. Write us for particulars about its application. We can give you the names of some of the best residences and best textile and other mills where it has been used successfully under the most adverse conditions.

Address for descriptive booklet, Dept. 8, mentioning this medium.

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This reinforced concrete tunnel was built on land, then launched, towed into place and sunk sixty feet below the river. The mixture is 1:2:4, all of the Portland cement in this tunnel being waterproofed by the McCormick Process. After the various sections of the tunnel were sunk, the vertical joints were made waterproof by a grout of Portland cement waterproofed by the McCormick Process.

Any brand of Portland cement mixed with McCORMICK WATERPROOFING COMPOUND at the cement mill, or by the contractor right on the job, in one of our specially constructed mixing machines, will make any concrete structure absolutely uniformly waterproof and alkali-proof. Our mixing machines are loaned free. Price 7 cents a pound f. o. b. any R. R. station in the U. S. Write nearest office.

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Cts.
Per lb.
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Tell 'em you saw it in ROCK PRODUCTS



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WATERPROOFING for CEMENT AND CONCRETE

No More Wet Basements! No More Damp Cellars!

A Cement Mortar Coat on the basement walls will absolutely prevent dampness. It is a cream-white paste, readily dissolved in water, and this mixture, instead of plain water, is used in mixing Cement Mortar or Concrete.

Ceresit Waterproofing Co.

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Banner Hydrate Lime

HIGH MAGNESIA FINISHING LIME

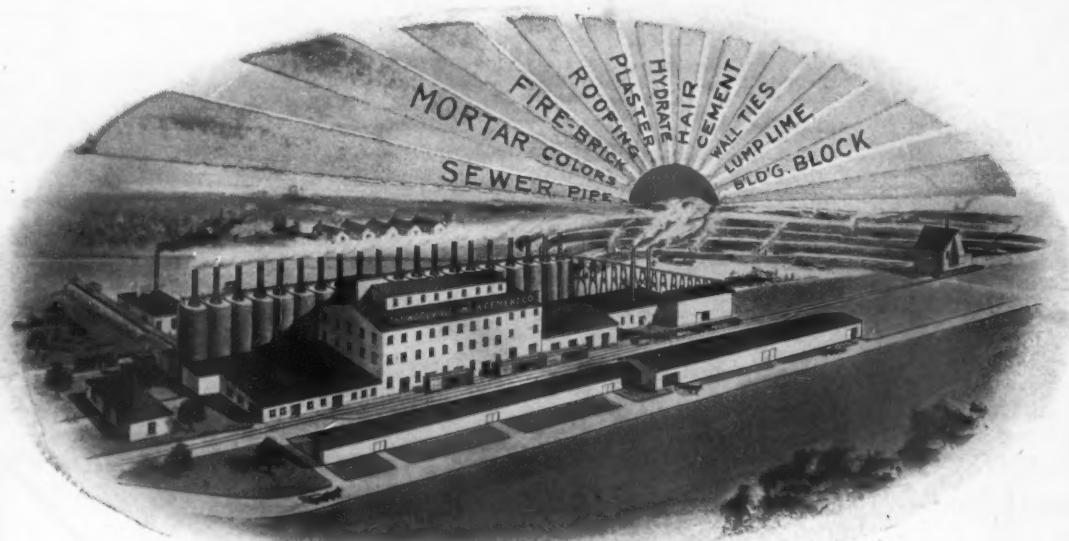
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**"THE BEST UNDER THE SUN"****THE WOODVILLE LIME & CEMENT CO.***Manufacturers and
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White
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FEW RAYS OF
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Ohio and Indiana White Finishing Lime, Ground
 Lime, Lump Lime, Fertilizer, Hydrate Lime,
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Capacity
8000 Barrels
Per Day

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Lump - Barreled - Hydrated - Ground
 STRONGEST IN OHIO

We are not connected with any Trust or Combination

WRITE US
 PHONE US

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HIGH CALCIUM HYDRATED LIME

At present prices you can waterproof, improve the color and strengthen the texture of all cement construction and actually save money, because the Hydrate replaces the same amount of cement (15 to 25%).

Kritzer Vacuum Process

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OF CHESHIRE, MASS.

MANUFACTURERS OF THE
 Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

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Tiger Brand White Rock Finish

is applied on more high class buildings in the United States than all other brands of finishing lime combined.

It is the Standard by which All Other Brands are Measured

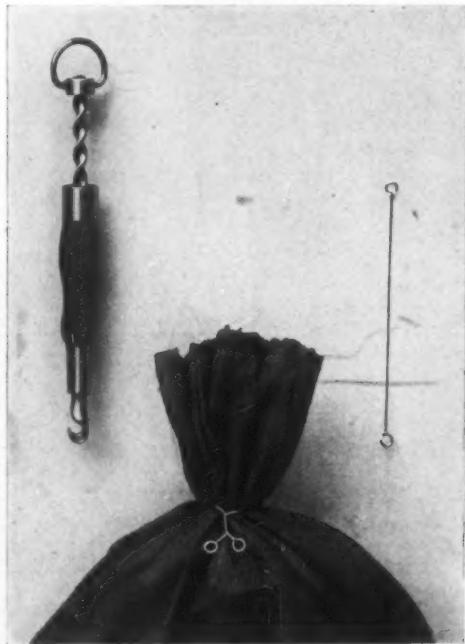
It is a safe, dependable product. Dealers who handle it are bound to have the best plastering trade on their books.

May we send you a quotation?

The Kelley Island Lime & Transport Co.
Cleveland, Ohio

The Curry Bag Tyer

SIMPLE :: SECURE :: UNIFORM :: RAPID :: QUICKLY UNTIED



SEND FOR CATALOGUE B

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MONARCH HYDRATED LIME

Cheaper and Better than LUMP LIME



Its value to you is greater because—

- It costs less to handle—
- It can be thoroughly soaked in 24 hours—
- No screening required—
- Carries more sand—
- Gauges with a third less plaster—
- Spreads further—
- Easier—
- Will not air slack—

You will be a MONARCH MAN if you once try
MONARCH HYDRATED LIME.

Our prices satisfies. Write us.
"We ship sudden"

The National Lime & Stone Co.
CAREY, OHIO

MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White Lime on the Market. Used and recommended by Sand-Lime Brick Manufacturers, Chemists, Soap and Glue Works, Plasterers and Masons.

Prices Cheerfully Submitted

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Hydrated Lime

Bulletin No. 40



How much longer will the lime manufacturer wait before he takes advantage of the opportunities that lie at his very door?

Foreign pastures are always greenest.

We invariably look afar for great results. Unconsciously, we overlook that which lies at our hand.

HYDRATED LIME

is the crying need of every dealer. Everyone who has handled this material has made money, is making money, and will continue to make money.

It can be manufactured now as cheaply as quick lime.

The dealer who is informed, *knows part only* of its possibilities. Will not the lime manufacturer show him its infinite uses, how it can be held in stock indefinitely, without any loss or detriment; when by giving him this information, it will cause such an increased demand for his product that even the lime manufacturer himself will be astounded at the result obtained?

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who are more than anxious to buy. It means increased business for them, more money for them, with no possibility of loss and hence more business for the manufacturer.

A number of lime manufacturers have seen the light and have installed a Hydrating Plant. Ask them what their increased profits are.

This seems so simple that great minds are not giving this question the proper attention.

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that the people want, for which there is the everlasting demand. AWAKE! Your opportunity is here.

The Concrete Worker

also reaps many benefits by using Hydrated Lime.

By its use

The concrete works easier under the trowel; hence

It is a time saver, and consequently

Less men can accomplish more work.

It prevents the mortar drying out too quickly.

It improves the color of the finished work.

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It improves the strength.

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is the Designing and Constructing of Hydrating Plants. By Our Process, The Kritzer Way, you will obtain a Perfect Product. We Guarantee This Absolutely.

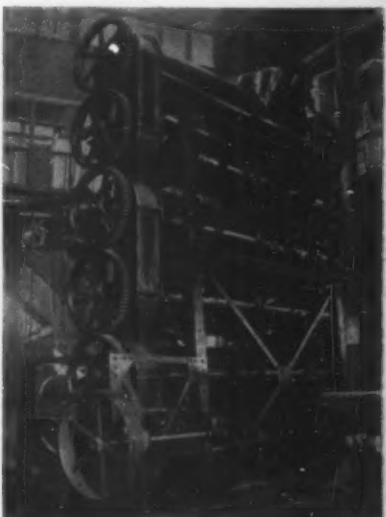
Your Increased Sales

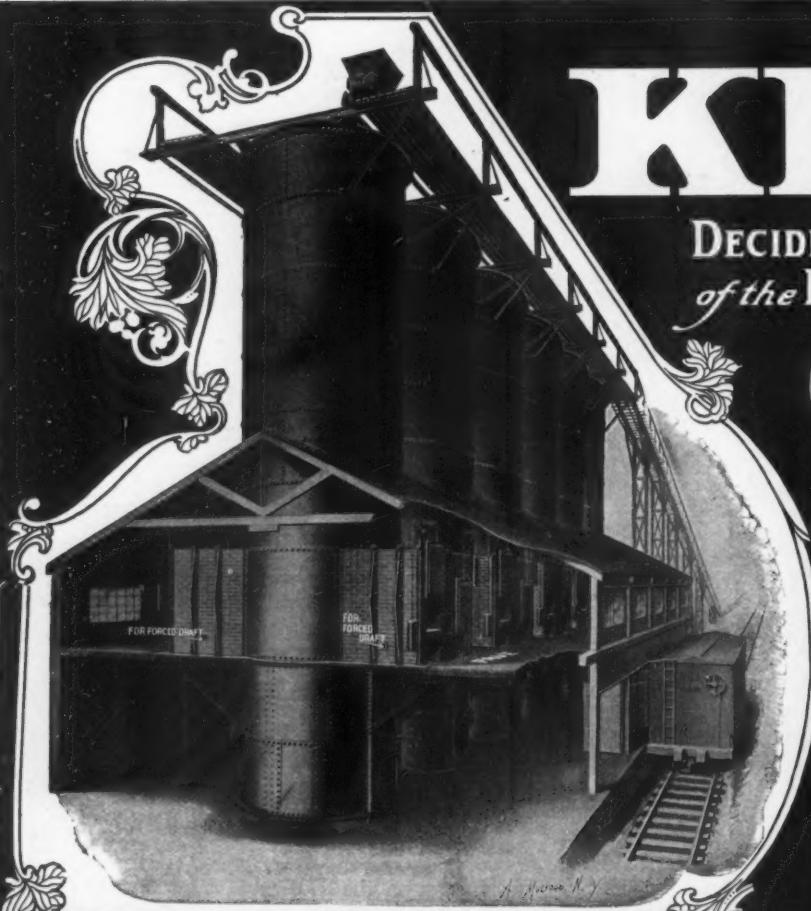
will soon pay for the installation.

It takes about three or four months to build a plant. Do not lose valuable time.

Why not take this matter up with us Now, and get ready for business as soon as possible.

The Kritzer Company
115 Adams Street, CHICAGO, ILLINOIS





KILNS

DECIDE the EARNING CAPACITY
of the LIME MANUFACTURING PLANT

THE KEYSTONE LIME KILNS
(Patented)

are famous money makers
and express the highest type
of modern development.
There's none quite so good,
and the price is right.

FULL PARTICULARS
WILL BE CHEERFULLY FURNISHED

**STEACY-SCHMIDT
MANUFACTURING CO.
YORK·PENNA**

Lime Manufacturer

Make your Hydrated Lime the paying end of your business by producing a plaster from which every mortar used in building construction can be made.

We are in a position to supply "ALCA" in pulverized form, needing no further treatment—add it to your Hydrate, and produce

ALCA LIME PLASTER

The Ultimate Plaster

ALUMINATE PATENTS COMPANY

2211 Chestnut Street,

Philadelphia, Pa.

Lime Making Economy

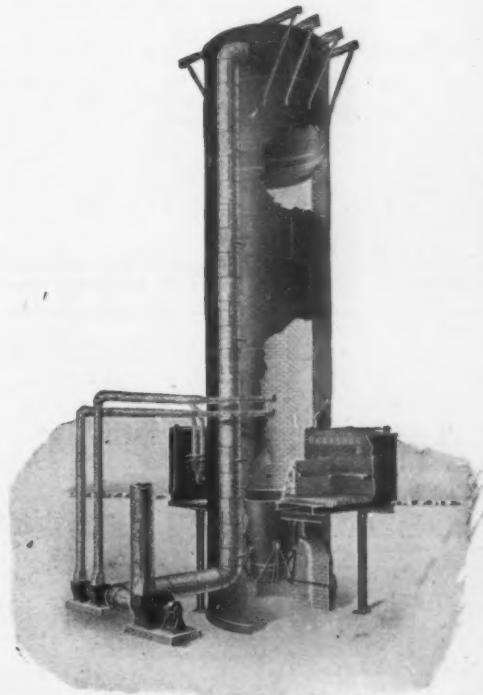
Present-day competition demands up-to-date equipment to bring manufacturing costs to the lowest limit.

In designing our lime kilns we have embodied every feature looking toward low cost in lime making.

Economical lime production is a question of the proper use of fuel. And our experience as combustion engineers enables us to furnish equipment which will give the largest output of high-grade lime per pound of fuel burned.

We furnish kilns using either coal, oil or producer gas as fuel.

Write for Bulletin No. 4.



IMPROVED EQUIPMENT CO.

COMBUSTION ENGINEERS

Executive and Sales Offices, 60 Wall Street, NEW YORK

The Bradley Producer

Gas Process for Burning Lime.

Four and three-quarter pounds of lime to one pound of coal on a large output is now being secured every day.

Does that look like economy to you?

—————RESULTS GUARANTEED—————

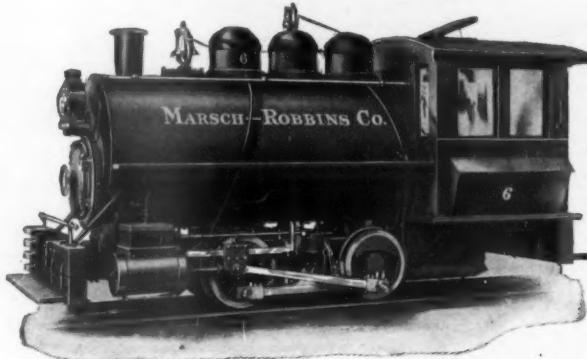
Duff Patents Company Frick Building
Pittsburg, Pa.

**E. SCHMATOLLA
CHEMICAL ENGINEER
OF 150 NASSAU ST., NEW YORK**

Designs and builds, since eighteen years, LIME KILNS, particularly with natural draft gas producers, and guarantees, in most cases on kilns, for a daily output of 30 tons or more; at least five tons of burnt lime for one ton of coal. More than hundred gas lime kilns built all over the world for all kinds of rock and fuel.

**All the Latest Books
Bearing on the Trade**
See List on Page 68

**Do You Have Cars to Haul?
The Davenport Locomotive
Will Save Money**



Special Designs for Special Purposes
Any Size, Any Gauge, Any Weight
Write for Prices and Particulars

DAVENPORT LOCOMOTIVE WORKS
DAVENPORT, IOWA

BRANCH OFFICES:
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Use the World's Only Successful Substitute for Dynamite
DYNALITE

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TWO PATENTS

DISCRIMINATING CONSUMER
WEIGHING THE POINTS OF SUPERIORITY



Water Grade
DYNALITE "Weigh" a-head

For Crushed Stone and Silica Sand
Quarries, Contractors, Stump
Blasting, Ore and Slag Shoot-
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Safer and Better Than Dyna-
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Illness.

Water Grade—No Thawing.

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Magazines: Ottawa, Ill.; Akron, O.; Findlay, O., and others

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ELYRIA, OHIO

Tell 'em you saw it in ROCK PRODUCTS

GREATEST ROCK
BREAKING POWER

IS WHAT YOU
WANT

**INDEPENDENT
DYNAMITE**

WILL SAVE YOU MONEY
AND PLEASE YOU
EVERY TIME

Independent Powder Co.
of Missouri

JOPLIN, MO.
ST. LOUIS, MO.

MAGAZINES AT ALL IMPORTANT POINTS

SELECT THE RIGHT EXPLOSIVE

It is of vital importance to every quarryman that he use the exact dynamite that will produce the best results in his quarry. Any old explosive won't do if you are to

OBTAIN MAXIMUM RESULTS AT A MINIMUM COST

Don't experiment with unknown brands. They are expensive and unsafe. Use the old reliable

DEPENDABLE, **DU PONT** DYNAMITE

We manufacture a dynamite to meet every practical condition and the free advice of our technical experts is at your service on any explosive subject.

WRITE FOR FREE HIGH EXPLOSIVES CATALOG No. 115

E. I. DU PONT DE NEMOURS POWDER CO.

PIONEER POWDER MAKERS OF AMERICA

Established 1802

WILMINGTON, DEL.

AETNA

40 per cent Aetna Gelatin is the best explosive for breaking hard rock in wet or dry work, because it contains within a given space the greatest amount of rending power at the right speed for rock breaking. Waterproof, dense, uniform.

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DRYERS
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DIRECT HEAT
DRYERS
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BANK SAND
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COAL, ETC.
 All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

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 For SAND, CLAY, ROCK PRODUCTS and OTHER GRANULAR MATERIALS
 Excellent Results, Moderate in Cost and Expense of Operation
 In sending for prices and printed matter describe your material fully, giving its percentage of moisture, required hourly capacity, etc.
 (FIRST MANUFACTURER OF ROTARY FIRE DRYING MACHINES IN THE U. S.)

Anchor Brand Colors

For Mortar, Cement and Brick
 Brown, Black, Red and Buff
 Strongest and Most Durable

Manufactured by **C. K. Williams & Co.**
 Correspondence Solicited
 Easton, Pa., U.S.A.

To Sell and Buy Quick
 use our
CLASSIFIED SECTION

QUALITY SIGN



QUALITY SIGN

MEDUSA PRODUCTS

WHITE PORTLAND CEMENT

For exterior and interior use. Equal or superior to any other White Portland known.

WATERPROOFING

(Patented April 23, 1907.)

Makes Concrete impervious to water and gives absolutely permanent results. Not a wash or an experiment.

WATERPROOFED PORTLAND CEMENT

Ordinary Gray Portland waterproofed with our famous Waterproofing and ready for use.

Obtain illustrated Circulars, Samples and Prices.
 Sandusky Portland Cement Co., :: Sandusky, Ohio

THE CUMMER DRYERS

For Mechanically Drying Everything.

The F. D. Cummer & Son Co., Cleveland, O.

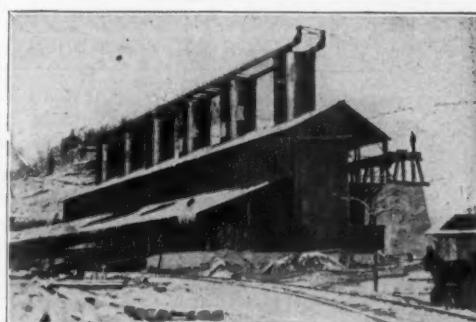
FOR IMMEDIATE SHIPMENT NEW AND REBUILT MACHINERY FOR CONTRACTORS AND QUARRY EQUIPMENT.

Two Rebuilt Western and Two Rebuilt New Era Elevating Graders, good as new. Twenty Rebuilt Western Wagons, Three 13-Ton Stone Bins, Two No. 2 Gates Crushers "D" Style. Rebuilt Jaw Crushers and Reversible Road Machines of Standard Makes.

HEADQUARTERS FOR Concrete Mixers, Wheelbarrows, Gasoline Engines, Gyrotary and Jaw Crushers, Cars, Hoists and everything in Quarry Equipment.

Write us for catalogue and prices.

THE WILLIAMS CONTRACTORS' SUPPLY CO., Columbus, Ohio.



Lime Kilns and Plant of Blair Limestone Co.
 Canoe Creek, Pa.

Designed by

Henry S. Spackman Engineering Company
 42 N. 16th Street Philadelphia, Pa.

ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume X.

CHICAGO, JUNE 22, 1911.

Number 12.

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EASTERN DEPARTMENT.

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Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.
Every reader is invited to make the office of Rock Products his headquarters while in Chicago.
Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....	\$1.00
In the Dominion of Canada and all Countries in the Postal Union.....	1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.	
Advertising rates furnished on application.	

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.
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Let us hope that the trust busting will soon be over and that we will arrive at some logical and sane basis for regulating our gigantic trusts.

There never was a time in the past decade like the present with so many economies and advantages to the building investor. Materials will never be any cheaper than right now. The labor troubles are about over, as you can already read the handwriting on the wall.

The biggest crops of fruits and cereals that our records have ever known are bowing before the harvesters in every state in every latitude. It is basic prosperity from which there is no escape, either by the courts or by retaliation of the interests. Nature is invincible.

The nation does not want an extermination of trade agreements, but it certainly needs a regulation, and nothing is needed so much as some sort of legislation that will hold down exorbitant and unreasonable profits and protect the struggling industries in their efforts to insure a reasonable recompense.

The readiness with which hydrated lime develops putty opens up a broad field of opportunity for the man who works with his head as well as his hands. By the way, there is a whole book on the subject of lime putty yet unwritten. Even the heaviest users of lime as a rule have little conception of the flexibility of application inherent to that most wonderful material—lime putty. Think it over.

Will the government overlook the labor monopoly in its investigations? Some of the troubles which have been going on in Chicago for the past few months furnish food for thought. People who are dependent in any way upon the building trades in this city have been heavy sufferers and the piratic methods of some of the capitalistic trusts are not a circumstance to those which are adopted by some of the combinations of labor.

Fire resisting floors and partitions are more important in the construction of a residence than any other kind of building. Records of the loss of life in fires show that the failure of floors is chargeable with a very distinct majority of the total casualties. The cost of complete

protection in this respect is trivial, so much so that it is high time for the authorities to require all new buildings of every class to put in incombustible floors and partitions.

It has finally been decided definitely by the Concrete Products Association to hold a third show in Kansas City, in March. We earnestly hope that the various bodies and associations now holding shows in the West will co-operate with the Cement Products Exhibition Company so as to hold one big western show. This idea was first broached through the columns of our paper last fall. It met with a ready response from the exhibitors, the men who are really the backbone of the shows. They with one accord endorsed the stand taken by us.

It takes no astute observer to see that it is expensive for the courts to criticise the big things in the commercial world. Beginning with Dr. Samuel Johnson, all the lexicographers fell down on the word "reasonable" as applied to legal distinctions. This is a classic contention and only illustrates that the Supreme Court is lost upon the sea of cross purposes created by an obsolete statute that has no more modern application than the laws of the Medes and Persians. If the Sherman anti-trust law is good for anything, let us have its interpretation without further delay. Twenty-five years is surely a reasonable length of time for business people to wait in order to find where they get off.

The American Lumberman, the leading paper in the lumber industry, has been waging a campaign for home development. They have enlisted the support in many cities of the daily and weekly press and the service of the local retailer of lumber, who is in many cases a dealer in builders' supplies as well, with the result that the campaign is bearing fruit. There never was a better time to build than now, and we urge upon our retailers of builders' supplies to take up the campaign and help push the good work along. It is a very worthy undertaking and one calculated to produce far-reaching results.

The South is developing more rapidly than any other part of the country today. If Horace Greeley were alive he would probably say, "Go South, young man," instead of "Go West." The vast undeveloped resources of the South are coming in for their share of attention now. "Nothing succeeds like success" is an old motto and it holds good in the South, as money is getting more plentiful and every success calls the attention of capital to other possibilities. While the development of the South during the past decade has been little short of marvelous, its growth has only really just begun and the next decade will witness an era of prosperity which will turn the eyes of the entire world on this long neglected but richest part of the United States.

The architects of this country are studying the values of cement with the idea of employing it more extensively in the building of homes. Competitions such as the one recently inaugurated by the Cement Products Exhibition Company will do much towards popularizing the use of cement for bungalows, and the good work should be carried on with the avowed purpose of enlisting the service of the leading architects in the designing of homes of a more pretentious nature. It is a well established fact that concrete offers the only solution for absolutely fireproof dwelling houses. Nothing appeals to the heart and mind of the American people so much as the protection of our loved ones. The knowledge that the home is safe from fire should be worth any difference in the cost of construction, but when it is taken into consideration that the concrete house costs no more than one built of inflammable materials, it is remarkable that even greater progress has not been made along these lines heretofore. However, with the impetus given to this matter by the recent competition and the interest generated at the cement shows, we look to see a greater number of concrete homes erected than ever before.

EDITORIAL CHAT

SPECIAL FEATURES IN THIS ISSUE

	Page
The Annual Good Roads Congress.....	3
Opening New Grand Central Palace.....	21
There is No Place Like Home.....	23
New England Retailers Meet.....	25
Cement Industry in Its Infancy.....	31
Manufacturers of Portland Cement Meet.....	32
Knickerbocker Portland Cement Co.....	36
Will Hold Show at Kansas City.....	44C
Concrete Grain Elevator.....	44D
Government Statistics on Concrete Work.....	45
Concrete Beer Refrigerator.....	46
Concrete Construction in Porto Rico.....	47
Concrete Bungalow Competition.....	49

Al H. Gallagher was in Chicago the other day all done up in brown. The last time we saw Al he was a sort of dream in gray, but there has been a change in all but the hair, which still retains its silver tint. The yacht Czarina, of which Mr. Gallagher is the commodore, is being overhauled and will make her maiden trip for the season next week.

E. W. Dunton, secretary of the American Well Works, of Aurora, Ill., the fore part of this month said that business this year with the company had increased from 10 to 15 per cent over that of last year. The fact that last year was the best the American Well Works enjoyed since it started in business shows that its pumps and drills have a large demand. Mr. Dunton said: "I have heard quite a number complain of dull times, but we have felt nothing of the sort."

C. M. Pettibone, secretary and general manager of the Fulton Fire Brick Company, Fulton, Mo., visited the office of ROCK PRODUCTS last week. Mr. Pettibone said business is good right now and they are turning out an excellent product.

Preston K. Yates, M. A. Soc. C. E., who recently erected the Tompkins Cove Stone Company's plant at Tompkins Cove, N. Y., has opened an office at 30 Church street, New York City.

Mr. Yates will devote his time to the designing of stone crushing and power plants, and to the investigating and reporting on quarries and plants not producing results.

The Austin Manufacturing Company has removed into new and larger offices in the new Karpen building, 910 South Michigan avenue, Chicago, Ill.

The Palmer Lime & Cement Company, of New York City, has moved its offices to 11 Cliff street.

Friends of H. S. Palmer, well known in the hollow concrete block industry of this country and Europe, will be pleased to know that he is in France and that the French—well up to the merits of concrete—are taking to the hollow block. If anyone should ask what part of France he is in, the answer would be—Paris is France.

ADVERTISING PAYS.

The Lewistown Foundry & Machine Company, of Lewistown, Pa., placed a 1/16-page advertisement in ROCK PRODUCTS in the issue which went to press on April 21st. This paper was mailed on April 23rd. On the 26th the Lewistown Foundry & Machine Company writes as follows:

"We are pleased to advise that we have already had an inquiry for machinery as a result of the ad."

We are frequently asked, does advertising in ROCK PRODUCTS pay? This is a concrete example which proves beyond question that if you have something to offer, which appeals to our readers, ROCK PRODUCTS can and does produce results. We have a long list of satisfied advertisers in our paper, who have been with us for a number of years and who can tell you that advertising in ROCK PRODUCTS produces results at a lower cost per inquiry than any other medium which they are using.

C. H. McCarthy, who is the eastern representative of the Cyclone Quarry Drill Co., of Orrville, Ohio, whose offices are at 30 Church street, New York, has been a busy man for some time past as his company has been making quite a number of installations in the East, two of which might be mentioned as the Knickerbocker Portland Cement Co.'s plant and the Valley Stone Co.'s plant. Mr. McCarthy says that inquiries in the East should come to him direct for immediate attention.

ROBERT CRAWFORD IMPROVING.

Robert Crawford, the energetic advertising manager of the Chicago Portland Cement Company, Chicago, is convalescing from a serious attack of appendicitis. Two weeks ago he was taken to the Frances E. Willard hospital and an operation was performed. From the first day succeeding the operation Mr. Crawford improved, and he is now on the high road to health.

Mr. Crawford is a young man who has been with the above company less than a year. His ability as an advertising man has been fully demonstrated during that time by the excellent results he has brought about.

The man who doesn't advertise may know his own business but nobody else does.

Charles H. Clairborne, general sales manager of the Union Mining Co., proprietors of the Mount Savage Fire Brick Works, whose offices are at Baltimore, Md., was a pleasant caller recently. Mr. Clairborne says that business with them is extraordinarily good, in fact they are somewhat rushed at the plant at the present time taking care of their business. He says, however, that it may be due to the fact that he has made an aggressive campaign for business and has not waited for it to come to him.

DEATH OF JOHN WARNER.

John Warner, second vice-president of the Charles Warner Company, Wilmington, Del., died at Wilmington May 29, at the age of 26 years.

Mr. Warner, in his short business career, revealed himself as a man of action and a gentleman in thought and act. He graduated from Yale in 1906 and assumed the duties of purchasing agent for the Charles Warner Company, and but recently was elected to the office of second vice-president.

He had a host of friends in the business and social world, and his memory is dear to all who knew him.

Theodore A. Randall, secretary of the National Brick Manufacturers' Association, and a director of the International Clay Products Exposition, is in London, England, where he attended the British clay products show. Mr. Randall represented the United States clay industry. The American association plans to hold a clay products show in the Coliseum at Chicago next March.

The Chicago Architects Business Association, the Illinois Chapter of the American Institute of Architects and the Chicago Architectural Club were the guests of the Universal Portland Cement Company on June 20th, on an inspection tour of plants Nos. 3, 4 and 6, at Buffington, Ind. A special train left the La Salle street station at 12:30, luncheon being served en route. The party returned to the city at 5 p. m. This trip proved to be highly entertaining and instructive to those who were fortunate enough to go. It is one of the many methods employed by this company to advertise its plants.

I. A. Ogden, of the Dittlinger Lime Company, of New Braunfels, Texas, was in Chicago last week. While in the North he visited quite a number of lime plants and renewed old acquaintances. The Dittlinger Lime Company contemplate making extensive improvements to their plant, and Mr. Ogden was getting tips on anything which might serve his purpose. He says they are hydrating nearly 80 per cent of their output and that their hydrate is meeting with favor with the trade. They use the Kritzer process.

Bloomington, Illinois, boys who will camp at Starveil Rock in August have planned a visit to the Marquette Portland Cement Works in order to view this giant industry.

When the Attorney General Investigates the Builder's Supply Business



Mr. Wickersham: "Mr. President, we can't do anything with these fellows. They are all losing money as it is."

NEW GRAND CENTRAL PALACE

The First New York Architecture and Building Show Opens the Metropolis' Newest and Greatest Exhibition Palace.

The first New York Architecture and Building Show signalized the opening of the new Grand Central Palace, the great metropolis' largest exhibition palace. With the passing of Madison Square Garden this will leave the new Grand Central Palace practically the only structure of this kind in New York City. The site of the new exhibition hall is from Lexington avenue to Depew place and from Forty-sixth street to Forty-seventh street. The new building has thirteen stories and is solidly founded. It has no basement, because where the basement would ordinarily be the steel car trains of the New York Central and the New Haven railroads are ceaselessly moved by electricity in and out of the new sub-terminal, encompassing trackage limited only by Park and Lexington avenues.

The main floor and the two floors above it are available for exhibitions and assemblages. A large rectangular opening in the second and third floors, the edges protected by ornamental balustrades, and the third floor by an iron grillwork also, results in one interior for the three show floors. The glory of the new structure is its entrance; once within the outer Lexington avenue doors the visitor must pause, fascinated by the very impressive loftiness and distance of space ahead; the temple-like vistas suggest a fine setting for a march of the prophets.

The building is absolutely fireproof. Of the thirteen stories only the three public exhibition floors have wood floors of maple thoroughly fireproofed. The window frames, sashes and doors throughout the building are all of metal. In addition to the broad entrance staircase, which is sixty feet in width, there are four large enclosed fireproof staircases and three additional exits, each ten feet in width, opening directly from the exhibition hall to the street in the rear of the building.

The building is one of the most important factors in the grand plan of the New York Central in the ground plan of the New York Central and Hudson River Railroad's terminal improvement. The area of the floor space is over six hundred thousand square feet. Practically every square foot is designed for exhibition purposes, because several floors of the building are leased by the New York Furniture Exchange, which was a tenant of the old Grand Central Palace, and all other space is best adapted to manufacturers' metropolitan exhibits. In rendering such service the old Grand Central Palace Company was a specialist and its experience throughout with both shows and permanent exhibits was availed of by the architects who designed the building.

The president of the old Grand Central Palace Company, Marcus Nathan, is the director of the new show building, which is leased from the New York Central by the Merchants' and Manufacturers' Exchange of New York.

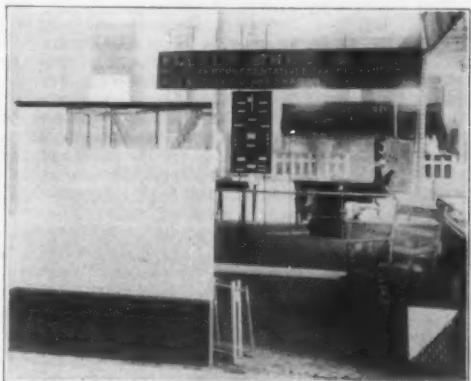
Architecturally worthy, it is a fitting coincidence that the initial event of the exposition life of the new home for "flat-shows," to use the parlance of the promoters of trade expositions, should be an architectural and engineering exhibition and the setting of the first show was not only strictly appropriate but was virtually a part of the show.

The general type of the new building's interior is French Renaissance. The entrance hall is sixty feet wide, finished in Rossetto Verona marble, with

a Tennessee marble floor and ornamented plastered ceiling, and from this entrance hall leads the main stairway, which is also finished in Rossetto Verona marble up to the first floor line.

This main stairway is sixty feet wide at the start and a clear view of the auditorium can be had from any portion of it. Above the first floor, around the three sides of the main stairway, are columns about eighteen feet high of the Doric order, with an ornamental balustrade between. A clear view of the main entrance hall can be had from the back of this balustrade, and also of the auditorium. These columns have bases of marble about five feet in height, and finished above in Imitation Caen Stone. From the top of this main stairway the central part of the building or auditorium, which rises to a height of forty-eight feet, can be seen. This central portion is flanked on either side by a lower portion which extends to about thirty-six feet in height.

Around this large auditorium are columns three feet in diameter and thirty-three feet in height,



FULLER BROTHERS & CO.'S DISPLAY AT NEW YORK ARCHITECTURE AND BUILDING SHOW.

of the Corinthian order, surmounted in the central portion by an entablature or cornice.

The lower portion has pilasters on either end running up two stories with ornamental plaster ceiling. Between these pilasters on the second and third floors runs an ornamental balustrade from which a clear view can be had of the main floor.

The main auditorium has a marble base of Botticino marble five feet in height, above which the walls are in imitation Caen stone, surmounted by an ornamental plastered ceiling.

The exhibition hall or auditorium has large casement windows on four sides with pivoted sash transoms above for an ample supply of fresh air. In addition ventilation ducts plentifully provided will insure under all conditions the comfort of large assemblages.

The building from the eleventh story to the top of the thirteenth is surrounded by a two-story arcade. Although constructed of brick and terra cotta, it recalls the Doric order used at the entrance. The arcade is an attractive and striking addition to the architectural features of the building; it is illuminated at night by electric lights so arranged as to add materially to the effective appearance of the structure after sundown.

The illumination and outlines of the arcade is visible in the evening hours from all parts of the city, as well as outlying points, as the building rises two hundred and six feet above the level of the street.

The New York Architecture and Building Show opened on May 19th and continued to the 27th. While the attendance was not as large as might have been expected, there were several nights when there was a good crowd present. The exhibits were all more or less meritorious, but there were hardly enough of them to fill the first floor.

New York's second annual Architecture and Building Show will be held the first of March, 1912, and applications for space are already being received from this year's exhibitors and a number of new people.

The success of the first show, despite its lateness of season, a condition caused by the wait for the completion of the New Grand Central Palace, leaves no room for doubt but New York will now have a complete and representative annual exhibition of architectural, building and engineering supplies that will not be limited in its scope to this country, as applications for space in next year's show have been received from one firm in London, England, and another from Paris, France.

Lumber, terra cotta, brick, marble, bronze and other interests that did not exhibit in this year's show owing to the limited time for preparation have declared their intentions of having extensive and elaborate exhibits next year.

A special feature of the show hereafter will be architectural drawings, especially those of students, and also model construction work, and arrangements will be made to show the new inventions of the year in building and engineering.

The architectural and engineering conferences will be developed and made a strong feature during the same period but independent of the exhibition.

During the progress of the show lectures were given by prominent engineers, architects and others in the Conference room on the second floor. In the afternoon and evening concerts were given by Gustave D'Aquin's Franco-American band, enhanced by the inclusion of vocal solos by Miss Gertrude J. Van Deinse, a popular concert singer.

The accompanying photograph shows the exhibit of Fuller Brothers & Company, 139 Greenwich street, New York City, which was one of many of such attractive booths displayed.

The large rough cast plastered model in the foreground demonstrated very clearly both the hollow and the solid metal lath and plastered partition. For the hollow partition No. 16 gauge Sharon steel channels were used, spaced 12" on center, and No. 24 gauge expanded metal lath, galvanized after expansion, manufactured by the Youngstown Iron & Steel Company, was securely wired to the same. At the various exposed angles of this model Parker & Mahoning metal corner beads, manufactured by the above named concerns, were conspicuously displayed, and their adaptability and value to such construction could be readily appreciated. For the solid partition Sharon cold rolled No. 16 gauge 1" channels were used, spaced 12" on center, with No. 24 gauge painted expanded metal lath securely wired to same.

This model was arranged so that visitors interested could readily examine the same from the rear



VIEW OF EXHIBITION HALL LOOKING EAST.



NEW GRAND CENTRAL PALACE, NEW YORK. VIEW OF EXHIBITION HALL, LOOKING SOUTHWEST.



THERE IS NO PLACE LIKE HOME

Community Development Means National Prosperity—Every Retailer of Builders' Supplies is Interested in the Great Campaign.

The American Lumberman, of Chicago, on May 13th published the editorials which are printed below. These were the first public steps in what has grown to be a world-wide campaign. "There's No Place Like Home" is the slogan now of thousands of towns and cities. The daily press in these cities has taken up the question in a serious manner, and in a manner extremely gratifying to the American Lumberman, "the Father of Community Development."

Community development has been extolled by many—individuals, associations, corporations and city executive councils have all had their hands in some movement to further home industries, localized to an individual city or town. These campaigns were all undertaken with a greater or less degree of sincerity and all of them had more or less effect on the welfare of their birthplace—but never before has such a powerful ally been found as the American Lumberman, one which has each separate spot in the United States under survey and is earnestly endeavoring to further the interests of this spot, be it city, town or village.

The work is, or should be, of major importance and interest to every property holder, every business man, every citizen of the United States, who has a home to protect and an honor to shield.

The following editorial, the first of the series, "There's No Place Like Home," appeared in the issue of May 13 of the American Lumberman and instantly received commendation and coöperation from all over the country:

"THERE'S NO PLACE LIKE HOME."

A keen observer of business conditions is authority for the statement that nearly every moderate sized town and village in the central states actually needs houses to quarter its people. The boom in far distant land schemes, now on the wane, has taken money away from home, the westerner investing in the East and the easterner in the West. There is a lure about things distant that the average man finds it hard to resist. "Distance lends enchantment," especially when properly played up by the skillful advertising writer working for an ingenious land promoter.

No one can deny the wisdom of land investments when the investor buys land for a home, for cultivation and actual development. But much of the money placed in circulation by land schemes during the last two or three years has gone into property which the buyer knew nothing about beyond what he read in a prospectus. This sort of "investment," as a rule, is gone forever and the experience is expensive.

Now that the land man has harvested his crop it is time for every community to get back to first principle, to DEVELOP THE HOME PLACE, to build the houses and improve the farms and promote the welfare of the home community.

To do all this there will be no better time than the present. Money is plentiful. Invested in a home it can not get away. Put into farm improvements it will return dividends. Truly, "there's no place like home" when it comes to laying by safely the savings that are to provide for a rainy day. Every move that tends to make the home community better is a move in the right direction.

Following this editorial came the one entitled "Today's Opportunity." This subject has been in each subsequent issue of the American Lumberman and below are given excerpts from the editorials:

TODAY'S OPPORTUNITY.

Begin Today to Forget

That the business transacted last month was less than that of the record breaking month of any previous year;

That pending legislation may possibly have a bearing or influence on your own affairs;

That investigation of the business conducted by some of the larger corporations are under way, bearing in mind that whatever decision is reached should be in conformity with the principles of justice and equity and afford no occasion for uneasiness;

That the business man you talked with during your ride down town exuded pessimism. Possibly he was unconscious of it; probably he did not know any better; And—

To Remember

That good crops are the foundation of good business, but that good crops alone do not make good business;

That national legislation concerns you not one-half so intimately or vitally as does the current demand for your own product;

That the purchasing power of a nation is gauged by the continuous employment of its capital and labor and the continuous exercise of confidence;

That never was money so cheap nor so much of it available as today;

That credit is being frittered away through inactivity;

That idle men, mills, factories and foundries constitute an extravagance no nation can afford;

That advancing civilization is manifested by better methods of educating, feeding, clothing, housing and amusing the people;

That these functions can be performed acceptably only through the continuous employment of all the capital, all the mental resources and all the labor of all the people;

That he who sets idle machinery in motion and provides for the use of products which are not now in request contributes to present and future progress, and that such contributions, once made, are cumulative in their effects;

That a start made today is preferable to one tomorrow, in that it saves one day's interest on capital, turns loose one day sooner the earnings of workmen and helps to inaugurate normal activity, normal happiness and normal progress.

Today's opportunity to men engaged in business today presents a wonderful opportunity to develop new lines of trade. Anyone with sufficient capital and machinery can produce standard commodities and force them on the market at a sacrifice or at a profit if demand is sufficiently strong.

Departing from such dry-as-dust methods, the man of originality discovers or creates new trade. He shapes his products to suit the particular requirements of that trade and, being first in the field, reaps the reward Dame Fortune gives to the progressive.

When trade is brisk, when both producer and distributor are straining every nerve to supply their customers, careful and painstaking investigation of possible opportunities is impossible. Opportunity to take up preliminary investigative work now insistently thrusts itself upon the attention of the observing. The fruits of such efforts are of a permanent nature. Such work calls for recognition and use of the principles of scientific management, applied largely to handling raw materials for the purpose of conserving their value. Today affords one of the best opportunities merchants ever will have to study the needs of their customers.

Every business man in the United States believes there will be a material improvement in commercial circles. But in the face of this belief general trade has settled into a well defined groove, the plodder being encouraged by the hope of one day increasing the pace.

This hope has developed into a conviction, but uncertainty exists as to when the pace shall quicken. Only one reason exists why commerce should be heavier a year from now than it should be at this time. That reason is the general expectation, hope and belief that it will be heavier; that the demand for products will increase and that prices will improve with the demand. This conclusion is based on the satisfactory state of the money market, on the returns from bountiful crops gathered in 1910, on the current active preparation to insure a large acreage of staple cereals and farm produce, on the general and heavy rainfall throughout the dry farming region of the West and the convincing fact that no material ingredient of commercial activity is now lacking.

The shrewd investor buys when in his estimation prices reach the bottom. This low stratum of values is accompanied by general inertia and a general indifference and distrust. One of the best indications of having reached the bottom is furnished by the active buying of timber. More and larger blocks of timber have changed hands this year than at any other time since 1907. The shrewd, farseeing buyers are preparing for that upward movement which ever accompanies a better and broader demand for commodities of all kinds.

It must be evident, therefore, to the observant that the psychological moment for starting has arrived; that further delay in the carrying out of plans and active preparations for the future means a material loss by reason of a competitive demand for money, labor and supplies which the coming improvement will usher in.

Perhaps the railroads will be the last to appreciate the advantages which a start today will give those who start. These great corporations, with their unwieldy boards of control composed of ultra-conservative men, may be among the last, if not the last, to profit by today's opportunity. It is probable also that their delay will not only cost the railroads vast fortunes because of the greater prices which will have to be paid for labor, materials and money, but that the commerce of the country will be handicapped by lack of facilities to move the increased tonnage. It has been declared that were the railroads to begin now to build up their roadbeds, repair and replenish their rolling stock and motive power and put in needed repairs and extensions within six months their activity would set in motion every idle mill, give employment to idle men and capital.

Too much dependence should not be placed on the vague hope that some day some unforeseen and today unknown combination of favorable circumstances will usher in a better condition of affairs. Commerce is not governed or conducted in such a way. Activity is contagious. The earnings of one group of men give employment to another group and this effect becomes cumulative, increasing and multiplying as it is transmitted from one line of trade to another.

Copies of these editorials with circular letters enlarging on the value of community development have been sent to practically every county in the country and local organs are now using their influence to further the movement. Many write that they have had the question smoldering in their breasts for a long time and lacked either the initiative or the power to start the ball rolling, but they never lacked the inclination and once started the movement has spread like fire.

Here is the ultimate goal towards which the American Lumberman is steadily forging.

THE PRIMARY OBJECT.

"The primary object of the Community Development campaign is to stimulate local interest in the small town and city and to induce the people to put a fair share of their money into improvements at home. It applies with equal force to all sections and under all conditions, for in substance it prescribes nothing more than a campaign for local improvement in every community—a healthy, conservative 'boom' that will concentrate the attention of the farmer, the wage earner, the merchant and every other good citizen upon the dependable opportunities for investment at home.

"Advocates of conservation have discovered that the conservation theory extends beyond the forests and minerals, beyond the water powers and other natural resources. It is applicable to every walk of life. Conservation of energy is as necessary, eventually, as conservation of capital, commonly termed economy, and both are indispensable to economic success.

"The Community Development idea is an application of the doctrine of conservation where it will do more good than in any other

ROCK PRODUCTS

JUNE 22, 1911

field. It teaches every man that it is his duty to improve his own condition, to make his home community a more attractive and satisfying place, to coöperate with his neighbors in building up the community and to help abolish the barred doors, the cobwebs and the 'For Rent' signs that today tell a story of failure in hundreds of towns and villages whose sole need has been a willingness on the part of the population to work together for the common good.

"This is true conservation in the purest sense. It is a theory that every honest, clean thinking man who has no ax to grind will indorse. But theory, alone, accomplishes nothing. The Community Development campaign is based on sound theory, but it has nothing further to do with theory. It is concerned with practice. Consequently the time appears to have arrived—the campaign having received national indorsement—when it is fitting to present some practical suggestions for active work, to summarize the things that can be done and suggest ways and means for doing them.

The Community—What It Means.

"Every farming, mining, lumbering, fruit growing or stock raising section has its capital—its center of activity. That center may be a small village or a large city. Whether the one or the other makes no difference as far as this work is concerned. The initial effort which is to put the Community Development idea into actual practice must come from that center.

"The most important factor in this work, taking the country as a whole, is the farmer. He can exert more influence for development or retrogression than all other agencies combined. The farmers of the middle West have built Chicago. By united effort they might destroy it.

Closer Relations With the Farmer.

"It is important that the business men of every community who wish to take up this campaign bear in mind the farmer's influence and that they constantly direct the work in such channels that it will tend to bring about closer relations between the local business interests and the agricultural population they are seeking to serve.

"The general object of the Community Development campaign is to bring about better business conditions and to improve the social and financial position of that dominant factor in national welfare—the community. But certain definite purposes are necessary if the work is to be carried on harmoniously. The following are among the most important:

"1. The stimulating of local pride in the community.

"2. An increase in the home-owning proportion of the population.

"3. Improvement in the public facilities of the community.

"4. Good roads.

"5. Scientific agriculture.

"6. Recognition of the absolute necessity of the local merchant as a distributor of goods.

"7. Better, more progressive methods of retail merchandising.

"8. Fuller recognition and support of the country newspaper as one of the chief factors in the moral, mental and financial betterment of the community.

"9. Coöperation among local business men in all work that will benefit the community, particularly through development organizations or commercial clubs.

"Each of these stated objects will form the subject of one of a series of thoroughly practical articles that are to appear in succeeding issues of the American Lumberman and that will be sent in advance to several thousand country newspapers.

The Work Begins.

"And now a brief outline of a plan for actual work:

"Every community that undertakes this plan should have a live organization of business men to handle it. In many cases the organization already is in existence. In others it is dormant, and in still others there is none. Organization, reorganization or adjustment of the necessary development club or association completed, the first move should be a survey of the entire community to determine what improvements are needed.

"This means a complete tabulation of the business and industrial opportunities, the idle

farm lands, the roads that need improvements, the lighting, power and transportation plants that are needed, school and church facilities, the supply of dwelling houses as compared with population and, in fact, a complete cataloguing of the weak points of the community that cause people to grumble and move away. This survey should determine also whether the farmers need further education in their work and whether merchandising standards are sufficiently high and methods sufficiently progressive to keep logically home trade at home.

"While this work is going on, plans should be laid for a 'Community Development Week,' which will be something in the nature of a merchant's carnival, to be held at some convenient time—for example, during the week beginning Labor Day. During the week merchants will make special exhibitions of their wares; real estate men will be prepared to exploit every opportunity to invest in good property; perhaps a course of instruction in scientific farming may be arranged for; special issues of local papers will be gotten out in advance, properly supported by the advertising of local merchants, telling everyone in the community—including all the surrounding territory that may properly be included—all about this event, and finally—most important of all—the development organization will hold an open meeting and ask every farmer, every merchant, in fact every man who has a legitimate occupation to become a member and to help do the work that is planned as a result of the information gathered in advance.

A Working Partnership.

"This means an actual partnership between the farmer, the business man, the lawyer, the preacher and the doctor, all pulling together for a common object. The carnival idea, the entertainment features that can be provided, will serve to draw the people together so that the necessary organization bond may be tied.

"Detailed plans must be laid to suit the needs of each community, but this need not be difficult, and the American Lumberman will have additional suggestions to offer from time to time.

"Lumbermen are urged to talk this over with their neighbors in business, with professional men and particularly with their local newspaper editors. Someone, of course, must take the initiative. After the work is started it will prove easier than it looks.

"This is a scheme not only to improve the community, but to keep trade at home, where it belongs. It involves a concerted effort along the very lines that have made the great cities, that have contributed to the upbuilding of the great mail order businesses and that are necessary to the ultimate salvation of the small business centers of the country."

WORKING FOR HOME, SWEET HOME.

R. H. Whitney, of the firm of B. F. Marsh Company, Worcester, Mass., under date of June 17th, writes as follows:

We are about to have our first meeting of the executive committee of the New England Mason Material Dealers' Association, and things are looking very bright. We have got a big territory here where everybody is working for "Home, Sweet Home," and not for the community at large, and we are going to try to get them in line and see if we cannot benefit each other's condition somewhat.

NEARLY THREE HUNDRED MILLION FOR SUBWAYS.

New York, June 15.—Work involving money to the extent of \$257,400,000.00, a very large chunk of which will go to the cement, sand and gravel and allied trades, is proposed in the new report of the subway committee of the Board of Estimate of New York city covering the construction of the tri-borough underground railway.

The report of the subway committee submitted to the Board of Estimate Wednesday, June 14, divides the field in Manhattan and Brooklyn between the Interborough and the Brooklyn Rapid Transit, giving the B. R. T. its coveted entrance into Manhattan through Broadway and the Interborough the privilege of completing its letter H in Manhattan.

In its recommendations the report advises that the B. R. T. get the Broadway-59th street loop connecting with Queens over the Queensboro bridge. This is the provision against which the Interborough has protested most strenuously. At one time the Interborough indicated that if this concession was given to the B. R. T. it would withdraw its offer.

That the Interborough build its extension down Seventh avenue from 42nd street and up Lexington avenue to the Harlem river, together with the three elevated extensions in the Bronx, up Westchester avenue to Pelham Bay park, up White Plains road to the city line, and up Jerome avenue to Woodlawn. This gives the Interborough complete control of the transit situation in the Bronx.

That the two companies share in the development in Queens, the Brooklyn Rapid Transit to connect the Queensboro plaza with the Williamsburg bridge by elevated and the Interborough to build elevated extensions from the end of the Steinway tunnel to Astoria and Woodside. This gives the Interborough the bulk of the Queens

That the B. R. T. get a tunnel under 14th street to tap Brooklyn's eastern district.

That the Brooklyn Rapid Transit gets the Center street loop in Manhattan. This will connect with the company's line in Broadway by means of a subway through Nassau street to the Battery and through Spring street to Broadway.

The plan would provide for the use of four new tunnels under the East river. There would be a new tunnel for the Interborough at the Battery, a new tunnel for the B. R. T. at Pineapple street and a new tunnel for the B. R. T. at 14th street, with the Steinway tunnel already constructed by the Interborough.

The report does not provide for the South Brooklyn development through extensions to the Fourth avenue subway to Coney Island and Fort Hamilton. The Fourth avenue subway is given to the B. R. T.

The report does not settle the dispute between the Interborough and the city as to the third tracking of the elevated.

A five-cent fare is demanded of the B. R. T. to Coney Island.

If this division of territory is not acceptable to the companies the conferees recommend that construction and operation of the tri-borough route be considered, to be operated either independently or by one of the companies.

It is estimated that the cost of building the new roads will be \$249,400,000.00, exclusive of the cost of the real estate to be acquired. According to the McAneny-Wilcox report the total sum that the city will have to spend would be \$123,200,000.00, but this includes an allowance of \$10,000,000.00 for the South Brooklyn lines. The city's share of the land to be taken over is estimated at \$8,000,000.00, so that the obligations which the city would be called upon to face would be \$131,200,000.00. The Interborough would have to spend for construction and equipment \$75,800,000.00 and the Brooklyn Rapid Transit Company \$50,400,000.00, making a total cost to the city and companies of \$257,400,000.00. The city's credit for the next five years is estimated at \$325,000,000.00.

A public hearing on the proposition was announced for Wednesday, June 21. At this hearing the Interborough will marshal its allies in a fight against any proposition which gives Broadway to the B. R. T. And the Brooklyn company in turn will oppose the provision that it must give a five-cent fare to Coney Island as a condition of receiving an operative contract.

CLEVELAND BUILDING SHOW.

Cleveland has set the pace with a Real Estate and Building Show. The show was opened May 27 and the original intention of the promoters was to close on June 3rd. But owing to the immense crowds which thronged the big Coliseum and Annex each night the show was continued another week. The Cleveland Association of Cement Users was a prominent exhibitor. Their booth contained many fine examples of concrete work. The following firms are members of the Cleveland Association of Cement Users:

The Acme Cement Stone Co., Buckeye Cement Block Co., Barber Concrete Chimney Co., George Barriball, H. P. Bennett, Diamond Cement Block Co., J. D. Dickson, East Denison Concrete Block Co., the Eagle Artstone Co., the Geist Cement Products Co., R. S. Lapham, Mooren Sand & Concrete Co., South Newburg Block Co., Renker Cement Stone Co., the Geo. Rackle & Sons Co., the Superior Cement Stone Co., Robert Scholl, the Waterproof Cement Block Co., West Park Concrete Co. and F. L. Werner.

The Universal Portland Cement Co. had a very attractive exhibit, consisting of a panoramic model of a cement mill.

A six-story reinforced concrete building, 460'x80', will be erected by the New York Dock Company at Atlantic Basin, Brooklyn, N. Y. Maynicks & Franke, 25 E. 26th street, New York city, are the architects.



The National Builders' Supply Association

Meets Annually.

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Henry W. Classen, Baltimore	Treasurer
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Official Organ, ROCK PRODUCTS

The Grand Rapids Builders' Supply Company is furnishing considerable brick for different concerns in that city this season.

The Detroit Builders' & Traders' Exchange reports that it is increasing in membership steadily. Recently fifteen new members were taken in.

The Grand Rapids Builders' Supply Company has built a new warehouse, adjoining its present office and warehouses. The warehouse is for the storage of cement.

The Brenner & Grebe Fuel & Supply Company, of Kaukauna, Wis., has been incorporated with a capital stock of \$15,000 by Edward Grebe, Fred Grebe and K. F. G. Brenner.

The Cleveland Material Company, Columbia Building, Cleveland, O., have been enjoying a very fair business this summer. While conditions in Cleveland are not as good as they might be, this firm has had a normal trade.

The Chickasaw Stone & Material Company has been incorporated at Memphis, Tenn., with \$10,000 capital stock. The company will sell stone, rock, cement and kindred materials. The incorporators are R. H. Trezevant, R. Lee Bartels and T. J. Turley.

The Ambrose Lumber Company, of Fort Morgan and Gill, Colo., who are retailers of builders' supplies, are going to add coal and feed to the other commodities which they handle. Speaking of business, they write: "The crop outlook is very good, if we can get rain within the next week or ten days. Everything is in fair shape, but it has been dry this spring and there has been considerable wind, which takes the moisture out of the ground very fast. Collections are very slow and money tight. At our Gill yard, the crop conditions are better, as there has been more rain."

OUTLOOK IS BAD.

Some sections of Colorado seem to be in the dumps. Under date of June 16 The Fort Collins Lumber Company, Fort Collins, Colorado, writes: "We have had little or no rain, the crops are dry, and most of the small grain has burnt up. We look for a poor fall; in fact, we cannot see much improvement before the fall of 1912."

NEW ENGLAND.

Retailers of Builders' Supplies Form Permanent Organization at Boston, Mass.—Forty-eight Present.

A permanent organization by the New England Retail Dealers of builders' supplies has been effected through the efforts of Charles M. Kelly, president and manager of the James C. Goff Co. of Providence, R. I. Under date of May 27 Mr. Kelly wrote the following letter, which was received at the office of ROCK PRODUCTS:

"On March 25 I addressed letters to thirty representative dealers in masons' materials in New England, calling their attention to the fact that I considered that there were abuses existing in the business which I thought might be remedied by the formation of a New England Builders' Supply Association. I received replies from twenty-eight dealers and they were all favorable to the idea.

"I then addressed letters to the same thirty, in addition to five more dealers in our immediate vicinity who were not included in the first list, asking them to meet in the Crown Hotel in this city on the evening of April 18.

"Thirty concerns replied to this invitation, and of this number twenty-five were represented at this meeting. After an informal discussion, which was very thorough, it was decided to form a temporary organization and to authorize a committee of five, consisting of the writer and four others to be selected by him, to arrange the details for a general meeting to perfect a permanent organization. This committee, which consisted of R. H. Whitney, treasurer B. F. Marsh Company, Worcester, Mass.; W. S. Simpson, of Waldo Bros., Boston, Mass.; F. H. Johnston, president of City Coal & Wood Company, New Britain, Conn.; J. Milton Payne, president Olney & Payne Bros., Pawtucket, R. I.; and the writer, met in Boston on May 4 and decided upon a circular letter, which was mailed to 1,068 concerns in New England which are classed as dealers in masons' material. One hundred and fifty-six replies were received, fifty-one of which came from parties who agreed to attend the meeting, one hundred and two expressed sympathy with the idea, but could not attend; and three were opposed to the proposition. I also received ten nice letters from other parties who liked the idea, but for good reasons could not be represented.

"The meeting was opened at 12:30 p. m., May 18, by a dinner in the American House, Boston, and after the dinner the meeting was called to order with forty-eight present. The writer was selected as chairman, and R. H. Whitney, of Worcester, as secretary. J. W. Wardrop, secretary N. B. S. A., and Charles Warner, president, then addressed the meeting and their remarks were received with great enthusiasm.

"Considerable discussion then ensued in regard to the principles for which the association should stand, the form under which it should be conducted, and the expense and personnel of its membership. It was finally decided that the association should be put on a permanent basis, and that a nominating committee selected from the floor and which consisted of James G. Lincoln, of Boston, Mass.; Edwin D. Allen, of Providence, R. I.; Richard C. Cleveland, of Worcester, Mass.; Mr. Bishop, of Boothbay Harbor, Me.; and Mr. Kierstadt, of Hartford, Conn., be authorized to nominate officers. This committee by Mr. Lincoln reported the following named list and they were unanimously elected:

"President, Charles M. Kelly, president James C. Goff Company, Providence, R. I.

"Secretary, R. H. Whitney, treasurer B. F. Marsh Company, Worcester, Mass.

"Treasurer, W. C. Norcross, president W. C. Norcross Company, Boston, Mass.

"Vice-presidents:

"S. W. Hersey, of Portland Stone Ware Company, Portland, Me.

"J. W. Woodworth, of Woodworth Company, Concord, N. H.

"F. E. Kimball, of Spaulding & Kimball, Burlington, Vt.

"Frank H. Howard, of Frank H. Howard Company, Pittsfield, Mass.

"George M. Welles, of City Lumber Company, Woonsocket, R. I.

"Frank H. Johnston, of City Coal & Wood Company, New Britain, Conn.

"These gentlemen to constitute the executive committee; and the form and name of association, place of meeting and other detail work to be decided by them. It was also decided that the committee should meet early in June to arrange these matters, and also to perfect plans for a general meeting to be held in July at one of the New England shore resorts."

The executive committee of the recently formed organization is to meet at the Warren Hotel, Wor-

ester, Mass., at 12 o'clock, June 22, to adopt a name, agree upon a constitution and by-laws and to arrange for a date on which to hold a general meeting in July or August.

NEW YORK RETAILERS.

New York, N. Y., June 16.—There was nothing startling in the local building material market during the past month, and the trade was quiet. The little business that was transacted was below the reasonable average. The inclement weather during the past week helped to retard business, but with more favorable conditions business is expected to improve as the season advances. Another factor which has thrown a wet blanket over building operations is the proposed building code, which is now in the hands of the aldermanic committee. Quite a number of big jobs are on the boards, but as yet operations have not been commenced.

G. A. Molitor, secretary of the Building Material Exchange, had the following remarks to make about the conditions in the local building material line: "Conditions are certainly dull in this district and they are worse in Brooklyn, where building is almost at a standstill. This state of affairs is caused by the inability of speculators to negotiate loans. About seventy-five per cent of the building operations in Brooklyn are run on a speculative basis. Collections are very hard to make and I have heard dealers complain of the scarcity of ready money.

"The demand for cement continues to be good and some of the dealers are pretty well cleaned up. Business is much better than it was at this time last year and dealers are getting a higher figure for their product than they were a year ago."

William C. Morton, of the Consolidated Rosendale Cement Company, stated: "The general condition of the building material market has been quiet during the past month. The rainy weather during the past week has temporarily suspended business. Dealers are doing a moderate amount of trading, but it is not quite up to normal. Although the demand for Rosendale cement has been the best during the past three years, the outlook is so uncertain that I think it best not to make a statement. A number of big jobs are contemplated, but as yet work has not been started. The price of Rosendale cement is unchanged, 80 cents a barrel at mill."

Mr. Wilson, of the Clinton Point Stone Company, had the following remarks to make about the crushed stone situation: "The demand for stone has been rather slow during the past month and general conditions are not as good as they were a year ago. We have received quite a few inquiries of late and deliveries will be made a little later on. When business starts here it generally begins with a rush and we are kept very busy supplying the demand. We look for an improvement in the demand for stone in the near future."

The United States Gypsum Company reported business during the past month as having been along fairly active lines. Collections have improved somewhat, although conditions are not as good as last year. Every indication points to the fact that business for the balance of the year will be as good, if not better, than that of last year.

G. W. Lavender, of William H. Barnes & Co., stated: "The demand for brick has quieted down somewhat during the past month and the activity noted during May has apparently spent itself. Quite a few jobs have been finished during the past few weeks. The new jobs that have been started now will not be ready to receive brick until the early fall months, when we expect business to improve. The price of Hudson is quoted \$5.75 to \$6.00 per M."

The Stamford White Company, of Manhattan, has been incorporated with a capital stock of \$50,000 to carry on a construction business. The incorporators are E. B. White, A. M. White and M. H. Sherwood, all of New York City.

The John O'Rourke Company, of West Orange, N. J., has been incorporated to deal in building materials. Capital stock of \$125,000. The incorporators are E. C. Balch, E. C. Balch Jr., of South Orange, N. J., and M. A. O'Rourke, of Orange, N. J.

The General Westrumite Company, of Jersey City, has been incorporated to manufacture building materials with a capital stock of \$100,000. The incorporators are G. E. Vorhees, C. Aufmkolk Jr., J. R. Turner, all of Jersey City, N. J.

The Damp and Water-Proof Products Company, of Manhattan, has been incorporated with a capital stock of \$100,000 to manufacture and deal in building materials and do a general contracting business. The incorporators are J. R. Woodward,

of New York City; G. T. Simonson, of Clifton, S. I., and C. J. McFadden, of Brooklyn, N. Y.

The E. G. Marshall Company, of Manhattan, has been incorporated to carry on a building and contracting business. Capital stock, \$25,000. The incorporators are F. G. Marshall, F. H. Race and C. Lindquist, all of Brooklyn, N. Y.

The Marine Supply Company, of Atlantic City, N. J., has been incorporated to deal in building materials, building and contracting. Capital stock of \$50,000. The incorporators, L. Kuehne, J. J. Nesbitt and E. L. Bader, all of Atlantic City, N. J.

The New Jersey Unit Brick & Tile Company, of Belleville, N. J., has been incorporated with a capital stock of \$45,000 to manufacture bricks, tiles, etc. The incorporators are F. M. Dyer, of Closter, N. J.; H. C. Low Jr., of Brooklyn, N. Y., and W. A. Sweet, of Newark, N. J.

The Latin American Contracting & Improvement Company, of Manhattan, has been incorporated to do a general contracting business. Capital stock of \$200,000. The incorporators are F. J. Redman, M. M. Salomon and W. S. Woodhull, of New York City.

The Shaughnessy Construction Company, of Albany, has been incorporated with a capital stock of \$25,000 to carry on a general contracting business. The incorporators are G. Y. Lansing, of Bethlehem; T. F. Shaughnessy and M. Van Alstyne, of Albany, N. Y.

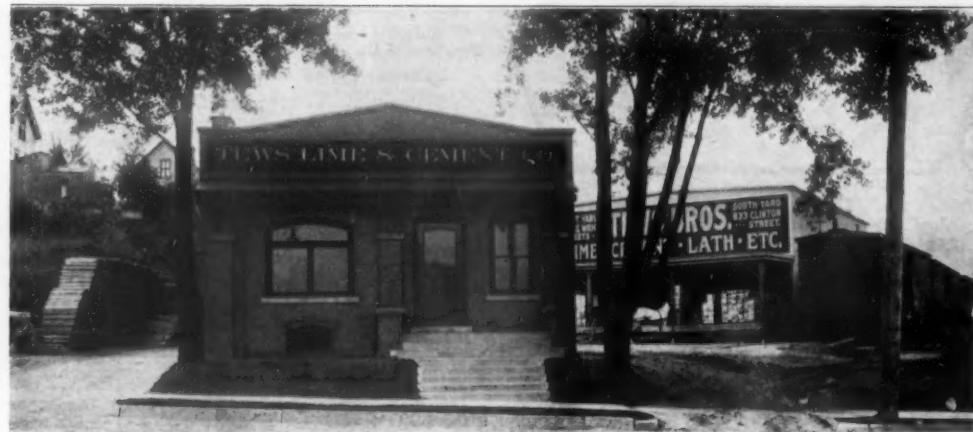
MILWAUKEE RETAILERS.

Milwaukee, Wis., June 19.—It is stated on good authority that in this city approximately 350,000 barrels of Portland cement were sold in 1910. It is conservatively estimated that this year sales will run close to half a million barrels of cement. This large quantity of cement, with other allied building materials in proportion, are handled by less than ten builders' supply firms, including some of the lumber firms, who are commencing to handle cement and plaster as side issues.

The builders' supply dealers here are live, wide awake people, carry large stocks and full lines of everything needed during the building seasons. Their yards are large, well arranged, well located for distribution of material and have excellent railroad and navigation shipping facilities. The dealers report a good business so far this year and express the belief that prospects are bright for the fall.

Away back in the territorial days of Wisconsin the Western Lime & Cement Company had its birth. It is claimed, and the claim has never been contradicted, that it is the largest manufacturer of magnesian white lime in the United States. It has lime works at Oshkosh, Clifton, Grinnell, Knowles, Hayton, Brillion, Sherwood, Kewanee, Sheboygan, Eden (Marblehead), Hamilton and Mayville, with allied houses at Chicago, Oshkosh, St. Paul, with general office at Milwaukee, Wis.

Early in the eighties it commenced to handle cement as a side line before it was made in this country. At that time it bought Portland cement in England in cargo lots, shipped by way of the Erie canal. Later large quantities of cements were imported from Germany. The storage capacity of its warehouse runs up to 50,000 barrels. The company is the distributing agent for the entire Northwest for the Huron Portland Cement Company. It handles fire brick, fire clay, Beaver board, waterproof paints, lath, and crushed rock, of which it is a large manufacturer. Its yard is located at First avenue, convenient to deep



OFFICE AND YARD OF THE TEWS LIME AND CEMENT COMPANY, MILWAUKEE, WIS.

water navigation, with railroad tracks on the other side, giving it excellent railroad transportation facilities.

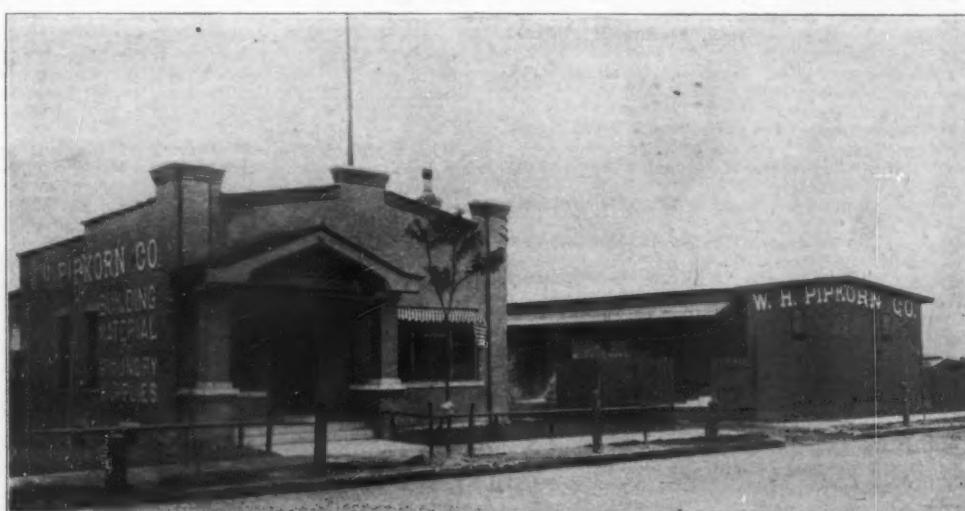
The Pennsylvania Coal and Supply Company was established 24 years ago in Milwaukee. It operates seven large yards scattered throughout the city in convenient locations for distributing cement, builder's material and coal. Its combined warehouse capacity for cement, plaster, etc., totals 25,000 barrels of this material. All of its yards have switch tracks running into them from the Chicago, Milwaukee & St. Paul Railway and the Chicago & Northwestern Railway. Its coal plants are located on the river, giving them superior shipping facilities. This company is the agent for Milwaukee for the cement of the Universal Portland Cement Company and the Chicago Portland Cement Company. The Pennsylvania Coal & Supply Company handles lime in bulk, cement, sewer pipe, drain tile, fire brick, common and pressed brick, etc., including a complete line of builders' supplies. Each of its yards covers a square block and is up-to-date in its arrangements, which are perfect from the point of handling material economically and delivering it promptly. Edward Whitall is the manager of the building material department of the company.

This company has three large cement block plants which manufacture 1,500 blocks every day. In one of its largest plants all of its concrete blocks are carbonized, put into a dry kiln for thirty-six hours, before distributing into the yard. It also manufactures a cement flue lining which it claims is the only fireproof flue lining manufactured in this section of the country. This flue lining is manufactured out of cement. It cordially invites the public and strangers in Milwaukee to visit its display room where pressed brick is on view, also its factory where flue lining and cement blocks are manufactured. The latter two products are very important features of manufacture in its plant in Milwaukee.

Eighteen years ago the foundation was laid for the building material concern in Milwaukee known today as the Tews Lime & Cement Company. Its officers are August C. Tews, president; Herman Prange, treasurer, and Henry W. Tews, secretary. It operates three yards; the main yard and office is at North and Humboldt avenues, the west yard

at 30th and Wright streets, and the south yard at 833 Clinton street. Each of these yards have switch tracks running into them from the tracks of the Chicago, Milwaukee and St. Paul railroad. The switch track in the main yard accommodates seven cars, in the west side yard seven cars, and in the south side yard eight cars. The driveways and team tracks are admirably arranged for handling builders' supplies economically and delivering it promptly. It owns a large number of horses and teams, which are used for hauling material to jobs. The company handles lime in bulk from its own kilns, which are operated under the name of the Milwaukee Falls Lime Company, at Grafton, Wis., 19 miles north of Milwaukee. It handles plaster of the U. S. Gypsum Company and cement from the Sandusky Portland Cement Company, for which it has the agency for Milwaukee and its immediate vicinity; sewer pipe from William E. Dee, Chicago, and others; fire brick from Mount Savage and Aetna Crown fire brick; lake sand and gravel. Its combined storage capacity is easily 10,000 barrels of cement and plaster. The Milwaukee Falls Lime Company intends to erect at Grafton a new lime plant, consisting of six kilns, late in the fall. Mr. Tews reports business reasonably good this year.

With a storage capacity of from 40,000 to 50,000 barrels of cement and constantly carrying 18,000 barrels of cement in stock, the W. H. Pipkorn Company, at 712 Park street, Milwaukee, is an important factor in the cement trade of Wisconsin. Its yard occupies two acres, with 180 feet street front on Park street, 280 feet street front on Muskego avenue, and 70 feet river front, where its cement is landed by boat on the docks. This part of the yard occupies a span of 50'x150'. The office building, warehouse and barn on the premises have been lately built and are up to date in every essential detail. Four switch tracks in the yard run from the Muskego railroad freight yard, where, through the Belt Line, connection is made with the Chicago, Milwaukee & St. Paul and the Chicago & Northwestern railways and Soo line. The arrangements in the yard of driveways and team tracks is admirable in saving time and labor in receiving and shipping material. These driveways are designated as "alleys," and numbered—Nos. 1, 2, 3 and 4. This builders' supply concern now known as the W. H. Pipkorn Company was established about twenty years ago. Twelve years ago Fred Paulsen, now traffic and sales manager for the Lehigh Portland Cement Company, sold him 1,500 barrels of "Lehigh." This year he will handle about 142,000 barrels of cement, including the "Owl" brand of the German-American Portland Cement Works and the Newago Portland Cement Company. He has the agency for the "Lehigh" in Milwaukee. The "old man," as Pipkorn is familiarly called by his friends in the trade, used the first automobile car for commercial purposes in Milwaukee. He believed he could save time calling on the trade. The first three months he had to give everyone a "spin" he called on, it being a great novelty, and lost time instead of gaining it. Since then he has placed three runabouts at the disposal of his selling force, and the Pipkorn company is the first one in the builders' supply trade to use an auto truck, which has proved a great benefit in delivering material quickly to jobs in the city. This company uses for hauling material 22 teams, 15 of which it owns. It handles the product of the Grand Rapids Plaster Company, Plymouth and U. S. Gypsum Companies; sewer pipe manufactured by William E. Dee, Chicago, and the Akron (Ohio) Sewer Pipe Company; sand and gravel, drain tile, fire brick, lath, etc.



W. H. PIPKORN COMPANY'S OFFICE AND YARD, MILWAUKEE, WIS.

ROCK PRODUCTS

Daniel Mayer, of the Mayer Lime & Cement Company, located at 469 Third street, established this business thirty years ago. He was one of the leading dealers in builders' supplies in Milwaukee a quarter of a century ago.

Practically at the northern corporation limits of the city of Milwaukee, 1211 Humboldt avenue, the yard and office of the Waukesha Lime & Stone Company was established five years ago. The location is an excellent one, as it is in the center of a residence district which is building up rapidly and uses large quantities of builders' supplies every year. It handles the product of the Huron Portland Cement Company and the "Owl" brand of the German-American Portland Cement Works; drain tile, flue lining, wall coping, etc., from the Chicago Fire Brick Company; sand and gravel, crushed rock and a complete and large line of builders' supplies. The superintendent and manager of the yard, Bruno E. Kaestner, is one of the live wires in this trade, who reports business this year fair and satisfactory.

Late in the fall the J. Druucker Sons Company will move to its new location in Newhall street. It will be provided with switch tracks, giving the yard the best of railroad transportation facilities; new office building, new warehouse, with large storage capacity, new barn and all the other buildings necessary. The buildings will be up to date and the arrangement of the yard perfect for handling material economically and promptly. This business was established by the late Joseph Druucker, 15 years ago, at its present location, 347 E. North avenue. It handles the product of the Atlas Portland Cement Company and the Marquette Cement Manufacturing Company; the marble wall plasters manufactured by the Band & Sarnow Company, of Milwaukee; the Druucker and Groth lines in bulk; sewer pipe from William E. Dee, Chicago, and others; sand and gravel; crushed

waukee & St. Paul Railway. The company has thirteen double teams and one single, and thirty horses, which are stabled in three barns. The arrangements of driveways and team track in the yard are excellent and its warehouse up to date in its construction, has a large storage capacity for cement. The "Marble" brand of hard wall plaster, very popular in Milwaukee, since it was first manufactured by this concern in 1891, has a large sale. It is said that this plaster has had an increase in its sales practically double, month by month, compared with last year. The company has a large and complete stock of builders' supplies, including Portland cement, lime in bulk, sewer pipe, fire brick, fire clay, sand and gravel. The officers of this company are C. Sarnow, president; E. W. Bond, vice president, and F. W. Kermott, secretary.

The Milwaukee Cement Company, which was established in 1876, is the agent in Milwaukee for the product of the Marquette Cement Manufacturing Company and the Edison Portland Cement Company. It operates two yards, one at Humboldt avenue and Lake street, with switch tracks from the Chicago, Milwaukee & St. Paul and the Chicago & Northwestern Railways, the other at Florida and Barclay streets, with switch track from the C. & N. W. Railway. Storage capacity of combined warehouses, 10,000 barrels.

PHILADELPHIA RETAILERS.

Philadelphia, June 15.—The retailer, although somewhat handicapped by the backward season, has in a great measure, owing to an awakened activity in building work, regained his lost footing and last month made encouraging progress. Building work in rows of small dwellings, two-family flats and apartment houses, as well as reinforced and fire-proofed mercantile structures, has been rapidly

general superintendent of the Master Builders' Exchange of Philadelphia, died suddenly on Saturday, June 10. It is understood that the young man, having a weak heart, succumbed to the terrific heat of that day. The sincerest sympathy is felt for the father by the members of the exchange and his many friends generally.

At a meeting of the Master Carpenters' and Builders' Company of Germantown and vicinity, in the Vernon building, on June 5, the following officers were elected to serve for one year: President, Samuel Harting; vice presidents, Frederick Ellridge and Thomas Rinker; treasurer, Forrest C. Wartman; secretary, William C. Wright. The society, which was organized in 1890, is in a flourishing condition, the membership being composed of all the leading master builders in that part of the city.

Thomas A. Lynch died at the residence of his son-in-law, Dr. John A. McKenna, of Lansdowne, Pa., on June 10. Mr. Lynch was a retired builder of Philadelphia, where he erected many of the larger buildings. He built the first "Public Ledger" and "Record" buildings, the present Medico-Chirurgical College, also the present buildings used by the Medico-Chirurgical Hospital, and many other structures.

The Hamilton Realty & Construction Company, South Plainfield, N. J., obtained a charter under New Jersey state laws May 22. Capitalized at \$50,000.00.

The American Construction Company, Newark, N. J., was chartered under New Jersey state laws May 24. Capital, \$25,000.00.

The Philipsburg Silica Sand Company, Philipsburg, Pa., received a charter under Pennsylvania state laws May 27. Capitalization, \$200,000.00.

The Ackerman Construction Company, Irvington, N. J., was incorporated under New Jersey state laws May 29. Capital, \$25,000.00.

The York Construction Company, Wilmington, Del., was chartered under Delaware state laws June 5. Capitalization, \$100,000.00.

The Stone Products Company, Sandy Lake, Pa., obtained charter under Delaware state laws June 7. Capital, \$25,000.00.

The Composition Flooring Company, Newark, N. J., was incorporated under New Jersey state laws June 8. Capital, \$50,000.00.

The W. H. Thompson Construction Company, Morristown, N. J., was chartered under New Jersey state laws June 8. Capital, \$25,000.00.

The Taylor Engineering & Manufacturing Company, East Orange, N. J., obtained charter under Delaware state laws June 8. Capital \$500,000.00.

SPRINGFIELD RETAILERS.

Springfield, Ill., June 21.—The retail business is undeniably good in Springfield, even if it does not run into a startling volume. For one thing, the building permits show it. The first week in June they went to \$56,000, which is far ahead of the same period in other years. And the dealers themselves are not sending up any noticeable wail of distress.

The East Side yard of the Vredenburgh Lumber Company has been doing a nice business all season, due to an impetus in the suburban building movement in that portion of the city. This company's South Side yard at Third and Laurel is also the scene of much activity, as a good class of residences is extending in that direction. The labor troubles in the company's planing mill have been ended and the contractors who work with this concern are going ahead rapidly.

Frank Fitzsimmon, Tenth and Capitol avenue, is now handling the Continental cement. The sand sold from this yard is pleasing, both to the firm and to the Petersburg Sand Company, which supplies it.

English Brothers, of Champaign, were awarded the contract for the new eight-story office building to be erected on South Fifth street by Reisch Brothers for \$63,478.

The Springfield Light, Heat and Power Company has let the contract for a new addition to its power plant at Tenth and Capitol avenue to the Daniel Evans Construction Company, of St. Louis. It will cost approximately \$25,000.

The Illinois legislature passed a bill appropriating \$5,000 to cover the preliminary cost of a new building to house the valuable historical exhibits owned by the state. The structure will be located in Springfield.

Improvements at the Illinois State Fair grounds, Springfield, call for \$125,000 for sheep and swine pavilions, \$75,000 for horse barns, and \$15,000 for toilets.

The Raymond Concrete Pile Company, Jersey City, N. J., has filed articles of incorporation in Michigan with a capital of \$1,000,000.



OFFICE AND TEAMS OF THE BOND & SARNO COMPANY, MILWAUKEE, WIS.

granite from the Portland Granite Company, Waterloo, Wis.; fire brick, wall coping and flue lining from the Chicago Fire Brick Company and W. H. McCarthy, Chicago. It owns four double teams and one single. Its present warehouse capacity is 1,500 barrels of cement. John P. Druucker, secretary and treasurer, said business had been good so far this year, with fine prospects for the fall season. A. W. Druucker is president of the company.

The Hinners Lime & Supply Company, located at 421 Third street, was established in 1905 and incorporated last April. Its yard at Third and Poplar streets is practically on the Chicago, Milwaukee & St. Paul Railway. The storage capacity of its warehouse is about 1,000 barrels of cement. It handles the product of the Marquette Cement Manufacturing Company, the Atlas Portland Cement Company and the Newago Portland Cement Company; plaster from the Grand Rapids Plaster Company and the United States Gypsum Company; lime in bulk and hydrate from the Standard Lime Company, of Fond du Lac, Wis.; drain tile, wall coping, fire clay and fire brick from the Chicago Fire Brick Company; wood and metal lath; sand, gravel and crushed rock. The officers of the company are A. F. Hinners, president, and Edward H. Driewer, secretary. Business was reported to have been fair this year.

Early in the '70s the foundation was laid by E. W. Bond's father for the builders' supply concern of Bond & Sarnow Company. C. Sarnow established a yard at 3302 Vliet street in 1896, the company's present location. In 1905 the two yards were consolidated and operated under the firm name of the Bond & Sarnow Company. A switch track runs into the yard from the Chicago, Mil-

waukee & St. Paul Railway. The company has thirteen double teams and one single, and thirty horses, which are stabled in three barns. The arrangements of driveways and team track in the yard are excellent and its warehouse up to date in its construction, has a large storage capacity for cement. The "Marble" brand of hard wall plaster, very popular in Milwaukee, since it was first manufactured by this concern in 1891, has a large sale. It is said that this plaster has had an increase in its sales practically double, month by month, compared with last year. The company has a large and complete stock of builders' supplies, including Portland cement, lime in bulk, sewer pipe, fire brick, fire clay, sand and gravel. The officers of this company are C. Sarnow, president; E. W. Bond, vice president, and F. W. Kermott, secretary.

The Engineers' Club of Philadelphia held a business meeting at its rooms, 1317 Spruce street, on June 3, President James Christie in the chair. After the minutes of the regular meeting of May 20 were approved the president announced that William Easby, Jr., chairman; H. H. Quimby, Joseph C. Wagner, W. B. Riegner, Herbert Rice, H. E. Ehlers and William C. Kerr had been elected to serve as committee on nominations for the coming year. At this meeting the following new members were elected: Active, Moses C. Craig, Walter C. Kennedy, Robert W. Shelmire, Edgar Stilley, Eddy Russell Whitney, Jr., William Louis Clayton. This meeting of the Engineers' Club of Philadelphia, it should be stated, was held conjointly with the local section of the American Society of Mechanical Engineers, whose chairman, Thomas C. McBride, presided during the reading of an interesting paper by Mr. S. B. Flagg entitled "The United States Fuel Testing Plant," which was subsequently discussed with animation by various of the members.

Ross Smith, 23 years old, the much beloved son of Charles Elmer Smith, the popular secretary and

CHICAGO RETAILERS.

Chicago, June 20.—Considerable improvement has been felt by the builders' supply dealers here since last month. A very important question was settled last week, that of the brickmakers' strike, and the fact that this strike has been settled has revived trade in a large degree.

Plumbers and steamfitters, however, are still on strike and because of this, building operations are not going ahead with anything like their usual zest. Many contemplated buildings have been dropped altogether because the season for building has so far advanced and work on buildings already started is only progressing slowly.

Lime, the dealers say, is in great demand and they find it difficult in some cases to supply this demand in fast time. Cement is moving freely from the retailers' yards, but the price is very low and only a sharp advance will bring it up to normal. Sand, gravel and plaster are all good sellers this month, with good prospects ahead.

Some little difficulty has been experienced among the dealers because of freight trouble, but not enough to cause any dismay. Building in the residential sections of Chicago is in excellent condition now. The list of permits taken out last week was over three times as large as the month previous and more are being applied for daily.

Paving work and cement sidewalk work is calling for a lot of cement, sand and gravel, in the outlying sections, and these materials are being supplied in these cases by the retail dealers. Cement stucco work is coming into favor more and more, say the dealers, and builders seem to be pleased with it.

Walter L. Woods, president of the Standard Material Company, 66th street and Lowe avenue, said of conditions: "Business this month has been pretty good, and the indications are that it will continue so throughout the summer. The settlement of the brick strike last week has already improved conditions greatly. The supply of brick is still pretty short, but in another week there will be plenty. We can hardly get enough lime to supply the demand. The price of lime is good and with a short supply will soon rise. The plumbers' strike is still holding back building, but it is expected that the Joint Board of Arbitration will take the question in hand soon and settle the matter. Then building operations will go ahead in fine shape. Last month collections were rather slow, but now they are improving and money seems to be plentiful. The demand for cement is just fair. The price is down to rock-bottom. It only takes the settlement of the plumbers' strike this month to start a large number of apartment buildings and boom trade."

J. B. Coates, south-side agent for the Templeton Lime Company, 65th street and Lowe avenue, said: "We are busy this month. We have a heavy demand for lime and it is quite up to the supply. The price of lime is holding up fine. Cement prices up to a week ago were in good shape and are still fair. The settlement of the strike is going to give us some good business this month. Prices on brick are away up and the demand is abnormally heavy because of the strike shutting off the supply for so long. Building permits 3 or 4 times as great as last month have been issued. The strike was unfortunate, as it greatly hampered builders, but some believe it was beneficial, as the residential sections of Chicago were becoming overbuilt. The plumbers' and steamfitters' strike will probably soon be settled. We look for a fine business straight through the summer without the usual vacation in July. Prices on all materials also are due to advance."

The west-side yard of the Templeton Lime Company, Homan and Grand avenues, is also doing a fine trade in lime, cement, sand and gravel. They report conditions good with excellent prospects for an increase in demand and prices.

J. B. Tuthill, president of the Tuthill Building Material Company, 227 West 63d street, said: "The settlement of the strike helped conditions. We are therefore having more work this month. Lime is in good demand, as are brick and cement."

H. O. Heitman, president of the Union Coal, Lime & Cement Company, 5834 Ashland avenue, reported: "We find things pretty quiet just at present. The buildings already started will of course be finished, but I do not expect many new ones to be started up before fall. All prices are somewhat demoralized. Most of the large contractors and builders will probably go on a vacation during the summer and operations will slow up. The demand for lime and cement is below normal at this time. Expect in a couple of months conditions will become better."

A representative of the Lake Building Material Company, 2144 West 47th street, stated: "We are busy this month on orders received after the brick strike was settled. The demand for lime, plaster and cement is fairly active now. Prices on these

commodities are fair. Our new west-side yard is nearly ready to take orders; it will be complete in a month probably. The outlook is fine."

Thomas J. Hanby, manager of the Ideal Supply & Manufacturing Company, 1831 West 22d street, stated: "Business with us in the cement line is very good. A lot of cement chimney work and sidewalk construction is calling for our materials in this neighborhood. We expect a much better business in three or four weeks. We are well pleased with conditions."

P. T. Britt, of J. J. Croake Company, 2929 West Fullerton avenue, stated: "Our business is very good at the present time on all lines of cement work. Cement sidewalk work is taking a large quantity of our materials now. We are doing a lot of ornamental work in concrete construction. Builders seem to be awakening to the fact that there is such a thing as an ornamental house from concrete. Everything is looking fine and we expect a large business this summer."

This company has several rooms full of unique and handsome models for concrete work. Flower vases, posts, benches, fountains, statues, etc., all of which are turned out in their shop.

Alfred Frerk, of Henry Frerk & Sons, 3135 Belmont avenue, stated: "Business is just fair. The brickmakers' strike demoralized trade to such a degree that it will be a couple of weeks before the builders start operating again. There are few buildings at the plaster stage yet and consequently that material is not in great demand. Lime and cement have a fair demand with fair prices. Collections are only fair at the present time. Money is not exactly tight, but contractors have had a hard time during the strike."

A representative of M. A. Staley Company, 1128 Cornelius avenue, said: "Conditions this month are fair now that the strike is settled. Apartments large and small are going up in this neighborhood. There is a good demand for lime, brick and cement and the outlook for a good summer trade is excellent. Prices are not quite as high as they should be, but will perhaps go up soon. Many proposed buildings in this neighborhood will be started if the strike of the plumbers and steamfitters is settled in time to finish the buildings by October. The general outlook is good and collections are fair this month."

The Waukesha Lime & Stone Company, Devon avenue and Sheridan road, is working along nicely this month, their representative stated: "Business is in good shape in our neighborhood. The greatest help probably has been the settlement of the brick strike, which was holding back building operations to an alarming degree. Lime, rubble and crushed stone are the chief materials in demand now and prospects are good. Prices and collections are moderate. There are many flat buildings going up. I believe in another week or so building operations will be in a normal state again."

A representative of the Farley-Koch Company, North 40th avenue and Kinzie street, stated: "Up to a week ago there was not much doing in the builders' supply line with us. The principal operations were held up and new work was not started because of unsettled conditions among the building trades. As most of the work is apartment houses which have to be finished by the fall renting season, lime, cement, plaster and brick were slow, but now the demand has increased somewhat and the summer trade bids fair to be heavy. Collections are beginning to show signs of improvement. The demand for lime and plaster will probably increase in less than a month."

George T. Carpenter, 40th avenue and Taylor street, reported: "Business has not been good for some time, and was rather slack during the past six weeks of the strike. Now that that momentous question is settled there is no fear but that the coming months will see a good trade in the builders' supply line. Small store buildings and flats are the principal works of construction in our locality at the present time. Prices are not as good as they should be, but still are not very bad. Collections are still rather quiet, but we look for them to improve when the contractors begin to get their money."

R. M. Combs, of the Thomas Moulding Company, stated: "Business has improved considerably since the settlement of the brick strike. We are having plenty of work now and conditions in our line are in very good shape."

A representative of the Brownell Improvement Company stated: "Business is pretty quiet now and seems to be generally so at this time. There is not a strong outlook for the next 30 or 60 days, but business will undoubtedly pick up by fall."

A representative of the Wisconsin Lime & Cement Company reported conditions in fair shape.

The yard of the Waukesha Lime & Stone Company, at Waukesha, Wis., was partially destroyed by fire last week. President John O'Laughlin, of

the company, is at Waukesha at present and estimates the loss at \$10,000. The heat was so intense that the railroad tracks were warped and no lime or stone can be shipped out until these are repaired.

ILLINOIS RETAILERS.

Springfield, Ill., June 21.—J. H. Dierker has sold his interest in the Bruning Lumber Company at Havana to H. T. Bruning and Harvey J. Phelps. Mr. Bruning already is a stockholder in the corporation. Mr. Phelps is identified with the Havana Metal Wheel Works and the Crescent Forge and Shovel Works, the chief manufacturing industries in the city. Karl Dierker will remove to a farm next fall.

A. J. Marcottem, manager for the Simpson Lumber Company at Allendale, has organized a juvenile band, which will bear his name.

The Alexander Lumber Company has sold its yard in Dixon to the Wilbur Lumber Company.

The P. A. Lord Lumber Company, of Hinsdale, has doubled its capital stock. The company has absorbed the Joseph Vial lumber business, and, as Mr. Vial retires, still remaining a stockholder, the yards will be transferred to his old site.

G. R. Hyten, well-known contractor at Edwardsville, has embarked exclusively in the builders' supplies business at 200 Linden avenue. He will make specialties of cement, lime, sand, crushed stone, mortar colors and metal lath.

The office of the W. E. Lyon Company at Carthage was struck by lightning and the yard destroyed at a loss of \$50,000.

N. Black, manager for the Alexander Lumber Company at Farmer City, pulled off a neat advertising stunt June 13 by holding a moonlight picnic at the company's yard. Music was furnished by a band and an orchestra of jubilee singers. A baby show, guessing contest, and short talks on local public enterprises made up the program. W. H. Blackburn, of Paris, Ill., a representative of the National Paving Brick Company, was down for an address linking his industry with public improvements. Seats for 1,000 persons had been provided in the especially illuminated sheds in case of rain. Practically all the merchants in the town co-operated by closing their stores at 8 o'clock.

PEKIN RETAILERS.

Pekin, Ill., June 21.—Yard trade is good in Pekin, according to local dealers. Pekin, because of its nearness to Peoria, is a problem in many lines of business, but the building material men seem to have no grudge against the larger city.

E. L. Conklin, secretary-treasurer of Conklin-Heuling Company, retailers and contractors, for one, does not find things depressing. This firm goes after the business in a progressive manner and the trade up to the middle of the month has been all one could expect.

Edward F. Lampitt, the Court street dealer, is keeping up with the times, and reports from his place are that Tazewell county people are using their portion of lime, cement, plaster and brick. Mr. Lampitt's masonry department will do the work on the new Evangelical church at Washington, Ill., for which he and D. H. Rohrer secured the contract. The structure designed by Hotchkiss & Harris, of Peoria, will cost \$30,000. It will be of brick veneer, trimmed with stone.

It is rumored, despite reports from other cities where plants of the Corn Products Refining Company are located, that the Pekin plant is profitable and that a big addition will be made to the local refinery.

The plans of Hewitt & Emerson, of Peoria, with whom is associated John Zimmer, architect of Peoria, have been accepted for the new \$60,000 high school building. The citizens will vote on a bond issue of \$100,000 June 27. Of this sum \$20,000 will be devoted to an addition to the Lincoln school.

The Peoria Builders' Supply Company, of Peoria, Ill., has been incorporated with a capital stock of \$10,000, to manufacture plaster and deal in building materials. The incorporators are H. B. Webster, W. G. Schmoeger and H. J. Smoeger.

G. M. Bushey and F. E. Bushey have taken over the entire building material business of P. G. Zouck & Co. and will continue it under the firm name of G. M. Bushey & Son. The business will be enlarged and conducted upon the most up-to-date methods and the public will find them ever ready to execute its orders promptly and satisfactorily.

The Southern California Lime & Cement Company has been incorporated at Los Angeles, Cal., with \$50,000 capital stock. The directors are W. J. McGraw, J. C. Stick and D. A. Griffith.

JOSEPH J. MANDERY.

One of the most up-to-date mason supplies yards in the state of New York is that of Joseph J. Mandery, of Rochester, which was established in 1879. The office building is handsome and unique in its interior fittings, having more the appearance of a bank than that of a builders' supplies office. It is forty feet square, with tile roof. It is built of granite and pressed brick. In the interior the floor is laid in Tennessee marble, the side walls being green Vermont and Irish Connemara marble. The hardware fixtures are of green bronze. As Mr. Mandery spends most of his time in this office building when not at home, he proposed to make it comfortable in every detail. His plant covers five acres, one warehouse 280'x30', another one 320'x80'. In this yard he has a garage for four Packard trucks, stables and a yardman's dwelling. Also, warehouses for pressed brick, sand and other materials. His warehouses are built with concrete foundations and have cement floors, the superstructures being of frame construction. He has facilities for unloading twenty-three carloads at one time, being on the New York Central and Hudson River railroad. Between the two tracks about 90 per cent of the material is unloaded to teams direct from the cars, the warehouses simply being used for reserve stock. He has his own railway for unloading pressed brick, hollow tile, lath, sewer pipe, etc.

Mr. Mandery at all times is looking for good connections with manufacturers of building specialties and is in position to give manufacturers the very best of representation in Rochester. He solicits correspondence from manufacturers of high grade building specialties. He handles no second quality goods.

PITTSBURGH RETAILERS.

Pittsburgh, Pa., June 17.—The builders' supply situation here presents in certain ways a very much better aspect. In the first place, the recent appropriation of \$50,000,000.00 by the Pennsylvania Legislature, which is the first amount to be used out of the total of \$176,000,000.00 planned for county road building in Pennsylvania, means that something is going to be doing right along and mighty soon in the building supply business in western Pennsylvania. Dealers here have an additional incentive from the fact that Edwin M. Bigelow, whom Governor Tener appointed as chief engineer of the entire project at a salary of \$8,000.00 per year, is a Pittsburgh man. He will have under him 100 assistant superintendents and engineers at salaries ranging from \$1,800.00 to \$7,000.00, and when the work is in full progress an army of 28,000 men will be under his command. Hundreds of miles of road will be constructed of brick and macadam in western Pennsylvania, in addition to hundreds of bridges, culverts, sluice ways, railroad crossings, etc. It means business and big business for the builder's supply men and they are girding themselves up to get their proper share of it. Another encouraging fact is that Governor Tener last week, under the new commission form of government, appointed nine new councilmen for Pittsburgh. Director of Public Works Joseph G. Armstrong is urging this new council very strenuously to take up at once the matter of spending a large portion of the first million dollar bond issue for Pittsburgh street improvements, which are badly needed. It is likely that definite action toward this end will be taken within the next few weeks. Contracts have already been awarded for raising the north side streets and for extensive street improvements on the south side and in the new wards beyond the tunnel. These big factors all are tending toward



OFFICE OF JOS. J. MANDERY, ROCHESTER, N. Y.

a rapid and steady improvement in the street material business, and dealers here are hopeful on this account.

The building supply business is just fair. City retailers are buying little. While building reports here would seem to indicate a large amount of construction work going forward the facts are that it is of such a nature as to do dealers much less than the ordinary amount of good. Better building and work in the industrial towns is going forward quite rapidly, and contracts there are quite satisfactory, as a rule.

J. M. Porter reports that he has made sales to the amount of more than \$25,000.00 in the past few weeks. He is furnishing the brick for three miles of road work in Washington county and also has good contracts at Carnegie, Monessen and other nearby towns.

Miller & Coulson gave out the following report about business in general: "Our business is good. We cannot kick at all. Our sales were the best ever in May. Our paper mill at Monongahela City, Pa., which manufactures cement sacks, is overrun with orders, and three big contracts were signed today for that plant. We are running there day and night. We are shipping all the building blocks we can get at Salineville, O., where our product is about 5,000 a day. Our facilities there are much better than ever before, as we have just completed a new kiln. In our judgment, fall business will be much better than at present, but we don't look for much improvement during July and August."

H. M. Marquis, of Heppenstall & Marquis, has this to say of city business: "Business does not show any marked improvement. Trade in the city wards is not good, and it does not look up as it ought to. There seems to be few projects up for bids, and work is being taken very low. Our brick business is very fair and prices remain about as last year."

Knox, Strouss & Bragdon report no improvement at all in city business. The sewer pipe trade, which was pretty good in the spring, has fallen off somewhat, and in building supplies inquiry is very low.

Secretary J. W. Windsor, of the Houston Brothers Company, had the following to say about current business: "Trade is very fair. In fact, our business is away ahead of last year in gross sales. Just now the outlook is not very dazzling. Our whole-

sale business has been best in outside towns, especially in sewer pipe and foundation block, of which we have sold an unusual quantity this year. Our plants are running full time. We are doing an extensive business in prepared roofing, which we have sold in large quantities to retailers." Mr. Windsor made a trip last week to Philadelphia, New York and Boston and found conditions there about the same as in the Pittsburgh district.

Councils of Millvale, a big north side suburb, have voted an \$18,000.00 bond issue, which will be spent at once for paving and other street improvements.

R. J. Cunningham, county controller, is advertising for bids for 5,000 barrels of Portland cement for repairs and construction of county structures during the ensuing nine months ending March 31st, 1912. Any American or imported Portland cement will be considered, if it O. K.'s to specifications. Bond of \$2,500.00 is required from bidders.

Michael O'Herron, of the South Side, has received the contract for improving South Eighteenth street above Josephine street, which will open up the only accessible route to Mt. Oliver, Knoxville and Carrick. The contract calls for widening, paving and curbing the street at an estimated cost of \$88,300.00.

Booth & Flinn, Ltd., have received the contract for raising the North Side streets in the flood district. There will be a very large amount of filling and also a big lot of concrete walls and abutments to be built in addition to repaving all the streets.

Reagon & Lynch, of Uniontown, Pa., have the contract for building a macadam road two miles long from Vance's Mills, Pa., to Philips, Pa., and work will be started at once.

The Ft. Pitt Bridge Company, of Pittsburgh, has been awarded the contract for widening the Smithfield street bridge at a cost of \$54,160.00. The work will necessitate the rebuilding of abutments and a considerable amount of concrete construction.

The Montour Brick Company is a new builders' supply concern in Pittsburgh, formed by Edward Fried, Thomas B. Freeman and Thomas E. Wilson. It will handle brick, coal and other lines of builders' supplies.

At the last meeting of the Manufacturers' and Contractors' Club in the Lewis block, June 6th, E. R. Hill, of the Doubleday-Hill Electric Company, addressed the club on the subject of "Ancient and Modern Architecture."

Allegheny & Northwestern Street Railway Company has given a mortgage of \$700,000.00, which is to cover the construction of a cross country street car line from Harmarville, Pa., a few miles above Pittsburgh, to Evans City, Pa. Work on the line will be started at once by Contractor John Schaffner, of Butler, Pa.

Washington County, Pa., commissioners have authorized brick paving exclusively for road work in that country. They have arranged to spend \$500,000.00 this year for highway improvements, and the change in road materials is bringing some nice contracts to Pittsburgh firms.

Houston Brothers Company has just issued a catalogue of 176 pages, giving the largest variety of wholesale builders' supplies ever put out by a Pittsburgh concern. The catalogue is a work of art in addition to being a splendid directory for contractors and retailers.

The Pittsburgh Clay Products Company, Keenan building, and the Central Sewer Pipe Company have entered actions in court at Lisbon, Ohio, against John Deemer, president of the Champion



INTERIOR VIEWS OF JOS. J. MANDERY'S OFFICE, ROCHESTER, N. Y.

Brick Company of Wellsville, Ohio, to which Thomas H. Silver, secretary, held a majority of stock to require the delivery of orders of brick. The clay products company claims it ordered 262,000 model faced brick and the sewer pipe company alleges that it ordered 187,140 building brick. President Deemer of the brick company recently asked that a receiver be appointed, and Geo. A. Frink, of Wellsville, Ohio, was named. The big plant has been idle for some time.

Ingram, Pa., has let the contract for grading and paving Berry street from Prospect avenue to East street and is working on a number of other street improvements.

One of the biggest improvements to be undertaken in the South Hills district of Pittsburgh is the widening and paving of West Liberty avenue throughout the entire length of Dormont Borough. This will be started, it is said, next month, and will be a large contract.

The brick salesmen of Pittsburgh are actively engaged in forming a salesmen association, to work in conjunction with the building brick people, etc. Meetings are to be held at the same time, and the organization will have Pittsburgh salesmen for its first officials, although it is meant to take in all salesmen in western Pennsylvania and eastern Ohio later.

Horses eat just as much when there is nothing doing as when the retailer is busy telling white lies about "just loading your stuff now, sir." You have noticed that.

MEMPHIS RETAILERS.

Memphis, Tenn., June 16.—There is talk of still another skyscraper in the city, to stand at the corner of Main and Madison streets. A twenty-five story structure is planned. The building will be of white enameled brick with terra cotta trimmings. I. Katzenberger, of New York, but formerly of Memphis, makes the announcement. N. M. Woods is the architect. Mr. Woods is located in the Exchange building, which he also planned.

P. C. Powers & Son, of Memphis, have been awarded the contract to lay 150,000 square feet of granolithic pavement in Grenada, Miss.

The contract for the new Dyersburg postoffice building has been let by the government, Rogers and Kaiser, of Chicago being the successful bidders. Work is to begin on June 19. The building with its furnishings will cost \$50,000.

The contract for the erection of the new lodge building to be occupied jointly by the Masons and Odd Fellows has been awarded to Blevins & Leigh, of Van Buren, Ark., at a bid of \$9,750. The building will be three stories in height and will be completed by Nov. 1.

CONDITIONS MORE THAN FAVORABLE IN 'FRISCO.

Under date of June 15 F. W. Wood, Jr., secretary of the California Building Material Company, of San Francisco, Cal., writes: "There is a large amount of road construction and railroad work going on, together with a considerable amount of municipal work. Country business is not nearly as good as last year, although it will probably improve between now and the fall. Generally speaking, however, conditions are favorable; more so in this particular line than almost any other building supply business."

H. A. Hunt was appointed eastern sales agent of the Edgar-Allen American Manganese Steel Co., with headquarters at New Castle, Del. This appointment was made to fill the vacancy caused by the resignation of V. W. Mason, Jr., last May.

E. G. Marshall Company has been incorporated in New York city to operate in Manhattan. The company will conduct a general contracting and building supply business. The capital stock is \$25,000. The incorporators were E. G. Marshall, Fort Hamilton, N. Y.; Frederick H. Race, 100th street and Fourth avenue, Brooklyn; Charles Lindquist, 9211 Fifth avenue, Brooklyn.

Ard. Blackford is one of the prominent retailers in builders' supplies at Ashland, O. In addition to Atlas Portland cement he handles Fishack plaster and concrete building blocks. Mr. Blackford takes quite an interest in religious work in Ashland and is well known for his many charities.

The Peoria Builders' Supply Company has been incorporated at Peoria, Ill., with \$10,000 capital stock, to manufacture plaster and deal in building materials. The directors are H. B. Webster, W. G. Schmoeger and H. J. Schmoeger.

E. W. HOCKER & SON.

E. W. Hocker & Son, 216 North Eighth street, Springfield, Ill., have been in the cement block and retail cement, sand and gravel business in Springfield for the last ten years, three of which have been at the present location. The members of this



OFFICE AND YARD OF E. W. HOCKER & SON, SPRINGFIELD, ILL.

firm, which is one of the leaders in its line in central Illinois, are E. W. Hocker and his son, D. F. Hocker. They have an established trade in cement block foundations and sidewalks and curbings coming from the large number of average residences which are being built in Springfield. In addition to this they have a number of complete block residences and business structures to their credit. The pictures printed herewith show the art of the firm—the Masonic hall at Dawson, Ill., and an attractive block residence in Springfield. In the Dawson job about 16,000 blocks were used, while the Springfield residence required about 5,000. These are 8x16, 2-piece blocks. A good trade has been developed in cement water tanks for farmers. The cement work in five houses for the Morton Real Estate Company is among recent contracts.

In the retail business there is a large local and country trade in the Chicago "AA" brand of the Chicago Portland Cement Company and the product of the Lehigh Portland Cement Company. Sand from the pits of the Virginia Timber Company, of Springfield, at Kilbourne and Pekin, and the Petersburg Sand Company is used. Early in the season supplies were scarce because of the flooding of the Virginia company's pit at Kilbourne by the Salmon River.

Messrs. Hooker & Son are furnishing the sand for the new Sacred Heart School building in Springfield. In their work the concern uses Grand and Crescent mixers and an Ideal block machine and Ideal tamps.

WEST COAST RETAILERS.

San Francisco, June 16.—The demand for building material in San Francisco and vicinity has been gradually increasing for several months past and business is now in better condition than for nearly two years. The record of building permits for the last month is not large in comparison with similar periods just after the fire, but shows a



CEMENT BLOCK RESIDENCE AT SPRINGFIELD, ILL.

considerable gain over last month and places San Francisco again in the lead of the Coast cities. There is also considerable activity in Oakland, not only in building, but in sidewalk and sewer construction. The eastern part of Oakland, annexed to that city about a year ago, is building up with great rapidity, and the retailers in that dis-

trict expect a period of unusual activity during the next six months. An important feature of the market this year is the increasing number of fine residences, some of solid concrete, and some of plastered exterior. One of the concrete type, designed by Architects William Curlett & Son for Mrs. Mary Pauline Payne, is just being completed at Menlo Park, Cal. A. H. Beetham has the general contract, and the structure when completed will cost about \$300,000. Architect C. B. Rushmeier has plans for an \$18,000 plastered residence for George Whittell, to be built in this city.

The Builders' Exchange of Los Angeles has for some time had under consideration a proposition to erect a 10-story building, and it is reported that plans for the structure will soon be ready.

G. M. LaShell, who was for six months superintendent of the Long Beach, Cal., Brick Works, resigning a short time ago, is now at the head of a new concern known as the Contractors' Supply Company, which has opened an office and warehouse and is conducting a general retail business. The company makes a specialty of Grand Canyon lime, Nephi plaster and Los Angeles gravel. J. Y. Parker, formerly of Colorado, has leased the Long Beach Brick Works and operations at the plant have been resumed.

W. S. McLean, sales manager of the Holmes Lime Company, says: "The demand for our staple brand of 'Diamond' finishing lime is now, as for the last six months, in excess of the supply, and we are getting the top market price for our product. We are able to do this by furnishing a se-



THE MASONIC HALL AT DAWSON, ILL.

lected lime well known for its fine quality. Our brick lime is also in active demand. We shall market this year about 5,000 tons of hydrated lime. Our "Vigorite" brand of hydrated lime is extensively used for waterproofing concrete, as well as for soil fertilization. Our work on hydrated lime in the farming community has greatly increased our sales of this product. Our "Diamond" hydrated lime is used extensively for finishing plaster work. Our trade on fire brick and fire clay of the well-known Ione brand is now very active. We handle exclusively Golden Gate Portland cement, a local brand approved by the Society of American Engineers, and of the first quality, and our trade on this material is continually increasing. It has always been our aim to maintain a reputation as a quality house, and by an earnest effort to handle only first-class materials we are enabled to sell our products for the highest market price. As an instance, we are now obtaining 45 cents per barrel on our selected lime in excess of the prices asked by some dealers in this market."

MEMPHIS CEMENT MARKET.

Memphis, Tenn., June 16.—The mid-summer cement market remains strong and there are a large number of concrete buildings going up in Memphis, to say nothing of an immense amount of culvert, paving, foundation and special work that is consuming cement. A wide variety of brands are being sold here. Prices are tending stronger. In addition to the local business there is a healthy trade at out-of-town points.

G. L. Simonds & Co., sales department of the Vulcan Soot Cleaner for water tube boilers, 801 Steinway Bldg., Chicago, Ill., are sending copies of "Economical Steam Production," upon request.

CEMENT

Association of American Portland Cement Manufacturers

Meets Semi-Annually.

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THE CEMENT SITUATION.

The demand for cement is holding up very well considering the time of the year. The market is not as strong as it might be, due to a great many causes. In some sections the bottom has dropped out of the market entirely, while in others the condition is quite favorable. Contrary to the general expectations much of the large work, which was contemplated, has not yet been let, and it is doubtful whether there will be any material difference in the situation until the fall trade opens up. There was considerable talk of overproduction at the recent meeting of the manufacturers, and it was the consensus of opinion that the largest producers would curtail their production to some extent. This seems to be the only logical solution of the problem, and one which is generally in vogue in Germany, where the cement situation is in the hands of a committee that regulates not only the minimum price but also the production. While our laws do not permit undue restriction of trade they cannot, in any way, interfere with individual manufacturers who desire to curtail their production. Those who are inclined to look aghast at the tremendous strides made by the cement industry should take into consideration that Germany, which has an area hardly as large as Texas, consumes annually thirty million barrels of cement.

LOUISVILLE CEMENT NEWS.

Louisville, Ky., June 17.—Business in this market is reported excellent by the manufacturers of cement, who are running their plants to capacity, and who report conditions all over the country as being favorable to heavy consumption. While the local demand is sufficient to satisfy anybody, business is also coming in in large amount from surrounding territory, and shipments are being made by railroads every day. Prices are holding up and as the demand continues it is expected that an advance will be put into effect before long.

The Louisville Cement Company, for which J. B. Speed & Co. are selling agents, has announced a new brand of cement under the name of Alea. It is neither a hydraulic nor a Portland cement, but is manufactured by burning the various materials entering into its composition separately and then grinding them together. The new product is intended to be used in heavy foundation work, and is cheaper than Portland cement. Henry Gray, treasurer of the company, announced that there had already been an excellent demand for it.

C. E. Jones, representative of the Chattanooga Estates Company, of Chattanooga, Tenn., gave out a statement recently to the effect that a cement company is being formed for the purpose of erecting the largest cement plant in the South, which is to have a capacity of 9,000 barrels a day. Chicago capitalists are interested, he said, and the financing of the project has been completed. The announcement was made several weeks ago, and no further details have been forthcoming, so that cement interests here are inclined to take the announcement with a grain of salt.

The Clinchfield Portland Cement Corporation has put its new plant at Kingsport, Tenn., into operation. It has a capacity of 3,000 barrels a day. David H. Houston is sales manager.

IN ITS INFANCY

Is the Cement Industry—Many Reasons Why This Is Literally True, Despite the Tremendous Increase in Its Use.

We often hear the remark that the use of cement is yet in its infancy. This is literally true in a sense, and yet the Romans knew the possibilities and values of cement thousands of years ago and employed it in a countless number of ways. What would they have done had they known what we do today? Think of the crude methods of manufacturing cement as compared with our modern day methods. There is no doubt but that all the cement which they had at that time was hardly as good as our hydraulic cements. What would they have done had they the perfect cement which we have today? It is probable that even more of their cities and roads would be standing today. While the modern day growth of the cement industry is large viewed from one standpoint, it is small considering the vast and unlimited possibilities of its use. Another generation will see wood go out of use entirely except for decorative purposes.

We are rapidly approaching the time when it will not only be considered criminal, but absolutely ridiculous for any person to even consider building any kind of a structure except out of incombustible materials. In what better way can we conserve our resources than by building unburnable buildings. It is only a question of time when we will realize that we are wasting millions of dollars every year by the erection of buildings which are no better than firetraps. If the unnecessary sacrifice of human life does not bring the subject home to us with sufficient force, then the monetary loss will. Who pays for the great fires? The people—the masses. You and everyone else. We perhaps do not realize it, but we do, just the same. So it is up to you to stop it. Our European brethren have progressed further with this idea than we have. The loss per capita is greater in this country than in any civilized nation.

We are careless because of our matchless and wonderful resources. Because we can not see the end we are extravagant and wasteful. We are the most prodigal nation on earth. Rome in all its glory never wasted her wealth like we in the United States do today. We are a nation of spendthrifts. Our fifteen-dollar-a-week clerk or stenographer has greater privileges than the richest man alive a century or more ago. We have come to consider as common necessities what would have been luxuries out of all reason during our grandfather's time. We live better, eat better, wear better clothes, have more conveniences than millionaires could buy a hundred years ago. We have progressed in everything except building. We seemingly follow blindly in the steps of our forefathers. We not only copy the style of architecture but we try to adapt ourselves to it, instead of evolving a new style to fit our present day requirements and use our modern material. That is the reason we say that the use of cement is still in its infancy—it is because we are just learning its wonderful possibilities. We are evolving slowly but surely a style of architecture all our own, combining utility with beauty.

We can build a fireproof house out of concrete today for what it cost us a few years ago to build the same house out of wood. An all concrete house is the cheapest method of construction today, all things considered. Even if the first cost is greater, it is by far the cheapest in the long run. It would be cheaper if for no other reason than that the element of danger from a fire is removed. The absolute security in the knowledge that your loved ones are safe from fire while they are sleeping ought to be sufficient to make up any difference in the cost. "There are none so blind, however, as those who will not see," according to the old proverb, and there are many people who will keep on building in the same old way until they are either compelled by law to do otherwise or until the matter is brought home to them by some terrible calamity.

The architects who are the molders of public opinion have been slower to awaken to the possibilities of concrete construction than the public. There are many of them who have fought against its introduction and use with a force and determination worthy of a better cause. There are many who will continue to fight it until they die. There would be five times the number of concrete homes built today were it not for this persistent fight which is still going on everywhere today. In nearly every city you will find architects who pooh-pooh every suggestion that concrete has come to stay. They will tell you it is just a fad and that it will soon die out. Some of them would

rather lose a client than design a house of concrete. Fortunately, however, there are many big, brainy, broad-minded architects who are today turning their energies toward the evolving of a style of architecture which will combine and blend the useful and the artistic in such a manner as to take advantage of the wonderful plasticity of this material and its many possibilities in the way of exterior treatment. All over the country today there are houses being built which are getting nearer and nearer to the right idea. A style of architecture is being evolved which is truly American, for while it sometimes contains lines or suggestions which are reminiscent, just as the modern musical comedy music is reminiscent, it is none the less satisfying and shows undeniable progress.

Concrete has made it possible to build a home at moderate cost which is fireproof and all that is needed to give the matter further impetus is a crop of new designs which will dispense with the box-like structure now so much in vogue in which the openings are too large for the solid areas. There is a fortune awaiting the architects in every city where they will devote their brains and energy toward a design for a cheap concrete house of really artistic design. Such an architect is not only a credit to his city, but a real public benefactor, since every concrete house which is erected is a protection to adjacent buildings and his neighbors are just that much safer. The wider and more extended use of concrete will be brought about more rapidly in this manner than in any other. Business men have realized the possibilities of concrete for factory, warehouse and grain elevator construction because it appeals to their pocketbooks, but they have been slow to take advantage of it for building homes.

As the years go on more and more cement will be used in roadway and street construction. The nation is gradually awakening to the necessity for more and better roads, and it is only a question of time before they will come to concrete as the only logical solution of the problem of a cheap, sanitary, durable method of road and street building. That is the reason cement is in its infancy. The people are just waking up to its manifold uses and advantages. When they are fully awake you will really see the "cement age."

HIGH CONCRETE CHIMNEY.

Mason City, Iowa, June 21.—One of the most massive and tallest chimneys in Iowa will be that erected by the Lehigh Portland Cement Company at its new \$3,000,000 plant here. The chimney will be 209 feet 9 inches high and for 100 feet from the base will be double with dead air chambers between. The base will be 25 feet in diameter, with the smoke flue 16 feet 4 inches in diameter and 11 feet 5 inches at the top.

CEMENT ON THE COAST.

San Francisco, Cal., June 10.—The cement business is about at its height all along the coast, and if the demand keeps up on the present scale the amount used will be far in excess of last year. The general distributive trade among the retailers and small contractors all over the state is extremely active, while large lots are being purchased every few days for buildings and general development work. Government business has also been a feature of great importance. The movement to Portland, Ore., for the last few months is greater than at any time since California cement was introduced in that city, the deliveries in April being 482,225 sacks, compared with 229,940 sacks in April, 1910, and 12,500 sacks in April, 1909. The amount delivered last month was 666,122 sacks, making a total of 1,748,703 sacks since January 1. It is believed, however, that this large movement will not last much longer, as the Portland Cement Company, of Portland, Ore., expects to have its new plant at Oswego, Ore., in operation about the first of the year, with a daily output of 1,500 bbls.

Shipments to the Hawaiian Islands are also taking a heavy tonnage of cement from California manufacturers, the principal feature at present being deliveries on a 30,000 ton contract for the Pearl Harbor dry dock.

The Cowell Cement Company has taken a Government contract for 28,000 bbls. of cement for reclamation work.

The city of Los Angeles will take bids June 19 for a supply of gypsum for the ensuing year for the use of its cement plant at Monolith, Cal.

The Riverside, Cal., Portland Cement Company finds its business greatly facilitated by the completion of a new branch line of the Los Angeles & Salt Lake Railroad, which enables it to ship its product to Los Angeles harbor in nine hours, compared with fourteen hours in the past. A large amount of this company's output is shipped from San Pedro to points up the Coast.

MANUFACTURERS

Of Portland Cement Hold Semi-Annual Convention at Kansas City—Trade Conditions Discussed—Good Attendance.

The semi-annual meeting of the Association of American Portland Cement Manufacturers was held at the Hotel Baltimore, Kansas City, Mo., June 12, 13, 14.

The delegates came to town early Monday, and while only the executive committee meeting was held on Monday, still everybody was there ahead of time.

President Edward Hagar called the meeting to order at 10:30 a. m. Tuesday, the 13th. The regular business before the convention was carried out.

The principal subjects for consideration at this meeting were: first, business conditions as they prevail today. After thoroughly discussing all phases of the situation it was the general opinion of most of the manufacturers that while prospects for fall were favorable to the industry, that curtailment of production was the only sensible thing to do, this to be carried out by the individual himself, there being no concerted effort to curtail. The greater necessity for thoroughly advertising the industry and systematically placing before the consumer the advantages of the use of cement was concurred in practically with no exception.

The efforts that have been put forth individually and as an association will be doubled in the future. It was recognized that the creative work in the industry must be the strongest from this time forth.

There was quite a lively discussion on the subject of water-proof cement, as to whether it was an advantage to the industry or no. The consensus of opinion seemed to be that the application of water-proofing to cement had been detrimental to the industry. This is due to the ignorance of the party mixing the materials and the carelessness and sometimes shortsightedness of the contractor, because the adding of a waterproofing in some cases has made the setting up of the cement almost an endless job. There was no animus in this discussion or any desire to do an injustice to the water-proofing man or manufacturer who was making waterproof cement, but when trade is dull and there is more capacity than demand "every little hindrance furnishes a worry all its own."

In summing up the demand for the year up to this time, it was figured that there was more cement consumed than a year ago, but notwithstanding this fact, there is a surplus in the warehouses, and unless curtailment is practiced at least until after harvest time, there is liable to be a running over of some of the warehouses. This certainly would not be advantageous to the industry.

In the corridors of the hotel and in the meeting itself comments were made on the demoralization of prices in several sections of the country where cement was in good demand the early part of the year, and all regretted the low prices prevailing, due to the ambitious manufacturer being determined to keep his mill running, if possible. A small-pox of low prices has spread all over the western country.

In the East conditions are better than in the West; in fact, our eastern friends have gotten used to the ordinary run of business and they are not disturbed by increased stocks. Every feature of the situation emphasizes the necessity for intelligent curtailment of production when the demand is off. With a capacity of 125,000,000 barrels and a demand for 85,000,000 to 90,000,000 it common sense to be making from 100,000,000 to 105,000,000 barrels? There certainly has been enough speculation in

building of plants and it should be eliminated in the manufacture and sales of the product of the cement plant.

The big consumers of cement, like the railroads and the industrial institutions, are not buying except from hand to mouth, but recognizing the fact that 90,000,000 people must be supplied with their daily needs; a house to cover their head, something to eat and something to entertain them; the world is not coming to an end. The application of business sense in the operating of a cement plant, the curtailment of production when the demand is off and the operation full time when the demand is going out full swing will have a good effect on the cement industry. Too many kilns and too much gas in the West is responsible partially for the present demoralization. Just read the barometer in trade a little more closely and the cement patient will begin to recover.

The labor trouble in Chicago has had a serious effect on the demand in the western metropolis, but we have reason to believe that the steam fitters and the plumbers will soon have their immense strike fund worn down to the quick, and then they may be able to consume more cement in the big village.

THE BANQUET.

Seventy odd manufacturers and their friends and guests were entertained at the association banquet on the night of June 13 at 7:30 p. m. As usual, Toastmaster General of the Association George Bartlett presided. Addresses were made by President Hagar, Vice-President Mallory, Mr. Sunderland, of Kansas City, and W. F. Cowham, Jackson, Mich. The quartette and other good singers made things pretty lively around the hotel at about time to turn the gas out.

The local entertainment committee, composed of Charles Apple, F. E. Tyler and E. R. Stapleton, did themselves proud in the preparation of this feast, the automobile ride and the country dinner on Wednesday noon.

Wednesday morning's session was practically taken up by a talk on methods of manufacturing Portland cement in Germany by Dr. Otto Schott and the work of the laboratory of the German Portland Cement Association. One of these papers is given herewith in its entirety and the other will be printed next month.

THE LABORATORY OF THE ASSOCIATION OF GERMAN CEMENT MAKERS AND THE NEW GERMAN RULES FOR THE UNIFORM TESTING AND DELIVERY OF PORTLAND CEMENT.

By Dr. Otto Schott.

When in the year 1877 the representatives of the German cement industry, which at that time hardly produced two and one-half million barrels, joined together to form an Association of German Cement Makers, this association set itself the task of furthering all interests touching the Portland cement industry, and of contributing by scientific work to the knowledge of the properties of Portland cement. How energetically it went to work is probably best seen by the rules it laid down on a scientific basis in the same year for uniform methods of testing Portland cement, and which have become a pattern for the cement industry of the whole world, although they have undergone many changes in the course of time. Notwithstanding that Portland cement had been made in England for fifty years, it is rather remarkable that this was the first attempt, with the help of experience and researches made up to that time, to lay down uniform methods for the testing of Portland cement. This meant immense progress for the cement industry, as the users of cement were thereby enabled to test and work the cement in a proper manner, and to judge the quality correctly.

The laying down of the rules had, however, a further advantage for the cement makers in that they showed that much was still to be cleared up with regard to the properties of cement, and that next to nothing was known regarding the constitution and cause of hardening of Portland cement, so that the impulse was given to study these questions. The German cement makers applied themselves with much diligence and zeal to these questions. Many works appeared which gave explanations regarding the properties of Portland cement, and so contributed to clear up the questions as to the proper way of making, testing and treating Portland cement. The value of a chemical laboratory for the Portland cement industry came to be recognized, and as early as the seventies every German cement factory had a well-founded laboratory and one or two chemists. The progress of the German cement industry is largely to be attributed to the close and fertile work in these cement laboratories. The laboratories offered their services unselfishly when it was a question of carrying out scientific work for the "Association." Shortly after the establishment of the first rules in 1877, a committee was elected to work out new rules, and the whole of the scientific work which was necessary for this purpose was done by the chemists of the different cement factories. How conscientiously and thoroughly this was done is best proved by the fact that the new rules set up in 1887 on the basis of this work were fully valid until 1909; that is, for more than twenty years.

Many matters which are nowadays looked upon as self-explanatory had at that time to be cleared up by troublesome and tedious experiments. With the growth of the German Portland cement industry, constantly increasing calls were made by the Association of German Portland Cement Makers on its members for collaboration in tests and chemical experiments, especially after the Association decided in 1885 to watch permanently over the quality of the German Portland cements. For this purpose every



OUTING OF THE ASSOCIATION OF AMERICAN PORTLAND CEMENT MANUFACTURERS
AT LANSBERRY'S INN, DALLAS, MO., JUNE 14, 1911.

cement had to be bought in the open market at least once a year and submitted to the standard test.

With the 86 different brands of cement which existed in 1898 this was no small task, but it was willingly done up to that time by a few of the large German works free of expense in the general interest. You will be interested to learn that the chief reason for this purpose was to see that no foreign matter, such as ground slag or limestone, was mixed in the cement by works belonging to the German Cement Association, which they bound themselves by signature to refrain from doing.

Up to the year 1909 there was only allowed an addition of 2 per cent gypsum or coloring-matter to regulate the setting time and to color the cement. The new rules allow 3 per cent. And even today every member must bind himself by signature to mix no kind of foreign matter with his cement, on pain of being expelled from the association. The Association of German Portland Cement Makers has by this step won in a high degree the confidence of the users of cement.

The question became more acute when, at the end of the last century, the so-called Iron-Portland cement works came into existence, which added 30 to 70 per cent of ground blast-furnace slag to the cement after grinding. New methods of analysis had to be found to show in an approved manner any adulteration, and in connection with this a lot of other work cropped up, which could not all be done in the laboratories of the different cement works. At the same time the Association was confronted with the task of making numerous tests for the purpose of revising the rules, and the question of the constitution of Portland cement gained more interest, so the building of its own laboratory was decided on in the year 1899. The cost of it was defrayed by each factory belonging to the Association paying an extra subscription of \$50 per share. Here I should explain that each factory has one share and one vote in the Association for every 50,000 barrels production. A factory with a production of 1,000,000 barrels has thus twenty shares.

In consideration of the meetings of the Association being always held at Berlin, and of the royal material testing office, with which it was desired to collaborate, being also at Berlin, it was decided to establish the laboratory there. The plans for the Association laboratory were submitted to the next general meeting, and the building of the same was commenced the same year.

The building is carried out in concrete and cement bricks, and it is covered with cement tiles. On the ground floor there is a large room for the preparation of test matter, and a small room for storing the same. There are also in separate rooms testing ovens, an electric motor, a compressor, and the boiler for the steam heating.

On the first floor are the rooms of the laboratory proper, consisting of a large chemical laboratory, a weighing room, a physical laboratory, and the room where the testing matter is broken and the cubes are crushed. Here is also the manager's office. The second floor is built as a dwelling for the laboratory manager. The laboratory is fireproof; all the floors are made of concrete and covered with linoleum. Next to the building is a small shed for keeping the cements in, and also for storing the standard sand, which is sold by the Association laboratory to all factories, builders and officials. The land cost \$7,000, the house itself \$15,500, the shed \$1,000, and the inner fittings about \$3,000; altogether, about \$27,000.

The mechanical, chemical and physical laboratories are fitted up with all necessary apparatus, but without extravagant equipment.

The laboratory possesses further an extensive library, containing all books and papers on cement. A small museum has also been fitted up, in which everything worthy of notice concerning cement is collected.

The "Association Laboratory" is under a management-council, composed of seven members of the Association of German Portland Cement Makers. There are certain rules for the management of the laboratory. Paragraph No. 1 says that the laboratory is to serve, in the first place, for the working out of scientific problems which are in the general interest of the entire cement and concrete industry.

It is further stated in the rules that tests of chemical and physical nature and breakage tests are to be carried out against payment of fixed fees. But, above all things, all the German cements are to be bought by the laboratory as often as possible from the trade, and



E. M. HAGAR, PRESIDENT.

tested according to the rules, whereby a check is exercised on the German cements by the Association. A complete analysis is made each year of all German cements.

The management of the laboratory is in the hands of a chemist, who has under him other chemists, laboratory workers, and assistants. He has to report every month to the management-council on the work done in the laboratory.

In the reports to the management-council the cements tested are to be distinguished by numbers and not by the names of the factories. The strictest attention is given that business interests shall in no manner be prejudiced by the reports.

However, if it happens that a cement does not pass the standard test, then the name of the factory and the tests are communicated to the management-council, which then takes further steps. With this exception no factory learns anything of the tests of the other factories. On the other hand, the manager of the laboratory communicates every year to each factory the results ascertained in the Association laboratory with its cement as bought from the trade. But no advertisement may be made of these tests.

To ascertain whether the cement contains any foreign admixture, a special process, the so-called suspension analysis, has been worked out. Cements which are at all suspected of being adulterated are frequently bought from the trade and tested.

The tests naturally embrace also slag cements, foreign cements, natural cements, and iron-Portland cements, which are regularly bought and tested.

I can probably best give you an idea of the activity and utility of the Association laboratory by naming some of the work which has been done in it during the last eight years.

1. The influence of a slight uncleanness of the standard sand, through brown coal products.

2. Regarding the Ljamin method of determining the free hydrate of lime in hardened Portland cement.

3. Analyses respecting the constitution of Portland cement.

4. Methods for determining the free hydrate of lime in hardened Portland cement.

5. Influence of the addition of blast-furnace slag to Portland cement.

6. Influence of the hardness of water on the setting time and strength of cement mortar.

7. Swelling phenomena of Portland cement in distilled water.

8. The behavior of cements on the addition of various means of adulteration, such as trass, ground sand, blast-furnace slag and artificial slag.

9. Concerning the question of mixing slag.

10. Influence of ground water on concrete channels.

11. Experiments regarding the permissible percentage of sulphuric acid, made with ninety different cements.

12. Storage of cement bodies exposed to the weather.

13. Testing process with atmospheric hardening.

14. Methods of recognizing foreign admixtures in cement.

15. Working out of a method for determining the sulphide sulphur.

16. Comparative strengths with different manners of seasoning made on over ninety cements.

17. Testing of ninety cements with increased proportion of gypsum.

18. Testing of ninety cements with combined atmospheric and water-hardening.

19. Finding of shortened ways of testing the constancy in volume of hydraulic cements.

20. Comparative tests of Portland cements with iron-Portland cements.

21. Comparative strength tests of "Association" cements with different methods of hardening.

22. Concrete experiments with different sands and gravels.

23. Concrete experiments with ground-damp and plastic mixture.

24. Experiments on the setting of all "Association" cements in a fresh state, and after three, six, nine and twelve months' storage.

25. Chemical analysis of sea-water testing bodies.

26. Uniform testing of hydraulic cements by means of prisms.

27. Experiments on bending, crushing and tensile strength of prismatic test bodies according to Schule and Ferret.

28. Attempts to make test bodies out of pure cement with the hammer apparatus.

29. Regarding the storage constancy of Portland cement.

30. Experiments with Belgian natural cements.
31. Experiments on the calcination loss and the specific weights of Portland, natural and slag cements.
32. Experiments on the water porosity of mortars.
33. The behavior of Portland and slag cements when hardened in salt solutions.
34. Testing of Portland cement mortars with regard to water porosity with addition of ground limestone, hydrate of lime, hydraulic lime, and trass.
35. Establishment of a uniform method of analysis for Portland cement.
36. Influence of the proportion of sulphide sulphur with atmospheric hardening.
37. The oxidation of sulphide sulphur in iron-Portland cement.
38. Testing of mortar mixtures of iron-Portland cement with pumice sand.
39. Testing of all "Association" cements according to the Le Chatelier test.
40. Experiments on the increase in temperature with the setting of cement.

Gentlemen, this is an extract from the scientific work done in recent years by the "Association" laboratory. The chief activity of the "Association" laboratory is directed to the regular testing of the "Association" cements, to the making of tests for private parties, and to work ordered by and together with the different commissions of the Association of German Cement Makers. Of such commissions we have: (1) The sea-water committee; (2) the rules committee; (3) the sand committee; (4) the setting time committee; (5) the committee for concrete experiments in moorland; (6) the committee for reinforced concrete.

For all these committees the "Association" laboratory has to carry out the experiments, which are generally very comprehensive.

The rules committee ordered in one year alone the making of 14,000 test bodies. The standard sand is also under the supervision of the "Association" laboratory.

Within a few years the sale of standard sand has been transferred to the "Association" laboratory, which derives a considerable income therefrom.

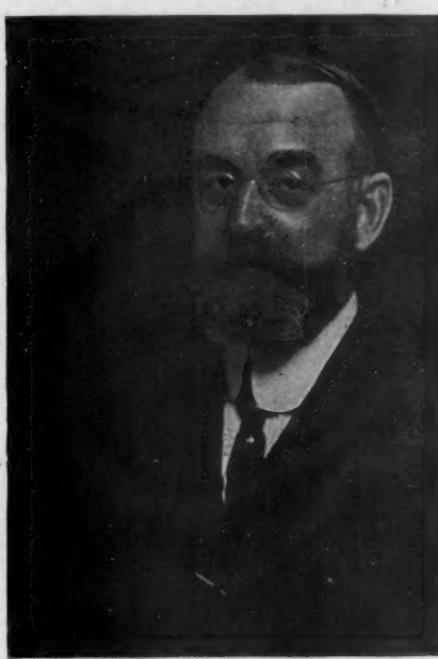
Besides this, the laboratory is being in recent years more and more employed by the factories of the "Association" and by private parties. The number of tests asked for from this side in the past year amounted to over 500. Most of these were tests according to the rules, but there were also raw meal analyses, suspension analyses, tests of trass, tests of concrete, sand samples, oil samples, tests of building bricks, tests of calorific values, and tests of feed-water for boilers. Various cement works have subscribed to have their cement tested every fourteen days in the "Association" laboratory.

The cost of up-keep of the laboratory is covered by the revenue from these testing fees, together with the profit on the sale of standard sand.

The greatest amount of work done by the laboratory is, however, the testing according to rules of all the brands of cement belonging to the "Association," the number of which has now risen to 96.

Each cement is subjected to all the tests prescribed by the rules. It is tested for fineness, specific weight, volume weight, setting time, volume constancy, tensile and crushing strength both with water-hardening and combined atmospheric and water seasoning. There are further made with each cement accelerated tests for volume constancy, including the Helmholz ball test, the kiln test and the boiling test. The last was not passed in the year 1909 by thirty-two cements, which otherwise were of the best quality and showed great strength. No objection was, of course, made to these, and the boiling test is only made to show its uselessness.

A complete analysis is also made of each cement. In this way very abundant and valuable analytic material is obtained, from which conclusions can be drawn with regard to the making of a good Portland cement. In the year 1909 it was ascertained that the mean lime percentage of all German cement brands reached 63.47 per cent, the highest point up to that time. The maximum contained in a cement was as much as 66.47 per cent CaO. It will interest you to know that although the German rules call for only 250 kilos pressure strength at the end of twenty-eight days, more than half of all German cement brands had 350 kilos, and of these eight



W. S. MALLORY, VICE PRESIDENT.



GEORGE S. BARTLETT, WHO PRESIDED AT THE BANQUET.

cements showed as much as 450 kilos pressure strength at the end of twenty-eight days.

The annual results of all cement tests and analyses of all German cements are tabulated and published every five years in a special pamphlet, which enables cement investigators to have at their disposal very conscientiously prepared and copious material. In this summary the various cement brands are, of course, not designated by names but by numbers.

Gentlemen, I can today only draw for you in bold lines a picture of the activity of the "Association" laboratory; if I went into details, a whole book could be written about it, although it has hardly been ten years in existence. I think, however, you will already have formed an idea as to how very useful it is to the German cement industry. The laboratory would have fulfilled its purpose if it had done nothing further than supervise the quality of the German cements. The "Association" laboratory has, however, far exceeded the expectations that were placed in it. At the commencement there were, of course, difficulties to be overcome; the proper man could not be found at the start to manage it, and the revenue did not suffice to cover the expenses. But the laboratory has now stood for a number of years under the management of an able and cautious chemist, who succeeded in a short time in making the laboratory pay for itself.

If I have indicated to you today the importance of this institution, I have done so with a special intention. When I had the opportunity last year of studying the American cement industry, I admired nearly everywhere the splendid arrangement of the factories, and I was impressed by the fact that the young American cement industry had made enormous progress in a short time. But on the whole it seemed strange to me that here in America so little laboratory work is done in the general interest by the cement makers, and that you have no "Association" laboratory, such as has been founded in different countries after the pattern of the German. Some of your members inquired at that time about our "Association" laboratory, and I therefore thought it would be of interest to you to learn something about its arrangement and activity.

The preliminary work which was necessary for the establishment of the new German rules was mostly done in the "Association" laboratory, and it was only when the work was sufficiently advanced to enable definite methods of testing to be built up that the latter were further worked out and completed by the members of the rules committee. You all know the new German rules which have been in force since last year for all German states, but it will interest you to learn the early history and to hear the reasons which led to the fixing of the different specifications.

As I have already mentioned, rules for testing Portland cement were first laid down in 1877. In the rules of that time the following were determined:

The cement should be sold in barrels of 180 kilos (396 lbs.). It should be constant in volume and seasoned.

Cement which had not set in half an hour was considered slow setting. Every cement should set in two hours at the most. The fineness of grinding was fixed at 20 per cent on the 900-mesh sieve, which corresponds to your sieve No. 100.

The cement was tested for tensile strength only, as is today still the case in America, and the briquettes were rammed by hand, as you do it here. The tensile strength was to amount to ten kilos per square centimeter. These rules were in force in Germany until 1887.

But it was soon seen that the tests made on the basis of these rules were not reliable. A cement which was tested in accordance with the rules in six different places gave six different results. The reason of the poor agreement was soon recognized, first in the impossibility of ramming the briquettes uniformly by hand, and in the great influence of the sand on the strength.

The problem had now to be solved to make the testing procedure as uniform as possible, and to eliminate all sources of error in the preparation of the samples. A sharp, fine quartz sand of as uniform a grain as possible was first sought for. Such a deposit was found at Freienwalde, and it was brought to a definite fineness by screening. The preparation of this standard sand is under the control of the royal material testing office and the "Association" laboratory.

The elimination of the sources of error could only be obtained by substituting machinery for hand work, and therefore Steinbrück's mortar-mixer was tried for mixing the mortar, and Böhme's hammer apparatus for ramming the briquettes in the molds. It was also attempted to regulate the addition of water. In the meantime the

conviction was arrived at that the testing of the concrete for pressure strength was just as important as for tensile strength; an apparatus was sought to brush the cubes, and it was found in the Amsler Laffon press. When the new rules were introduced in the year 1887, the terms of the same had been so well worked out by experiments that they stood proof for twenty-two years with success. These rules, which were in force until 1909, differed from the old rules chiefly in the following points:

A definition for Portland cement was laid down. The object of this was to exclude from the definition "Portland cement" all cements which had been diluted by the admixture of blast-furnace slag or limestone. The members of the Association were bound to bring into the market nothing but pure, unmixed Portland cement. The declaration they had to sign ran: "The members of the Association may only bring into the market under the designation of 'Portland cement' a product made by an intimate mixing of finely ground calcareous and argillaceous materials or calcareous and argillaceous silicates burnt to incipient fusion and ground to a flour. They bind themselves to not acknowledge as Portland cement any product made in a different way from that described above, or to which foreign matter is added during or after burning, and to look upon the sale of such products as deception of the buyer." But this bond does not apply to slight additions up to the amount of 2 per cent which may be required for the regulation of the setting time or for other special purposes."

In addition to tensile strength, the pressure strength was introduced. At the same time the claims on the strength were raised considerably, namely, from 10 to 16 kilos per square centimeter. For the pressure strength 160 kilos per square centimeter was fixed.

The standard sand was introduced as uniform sand, and the preparation of the briquettes by machinery was determined on.

The residue permissible on the 900-mesh screen was reduced from 20 per cent to 10 per cent.

The Vicat needle was introduced for the determination of the setting time, and it was resolved that slow-setting cements should have at least two hours' setting time.

The old rules regarding the volume constancy were retained unchanged.

At the commencement of this century concrete construction and the use of concrete for building found a larger field; it was soon recognized that the claims on the strength would again have to be increased, and that the preparation of the test bodies would have to be more suited to the practice. If with the previous rules the seasoning in water was laid down, it was done because the results agreed closest with this method. In years of work, in which many hundred thousand sample bodies were stamped and crushed by members of the Association, a serviceable method was at last found in the so-called combined seasoning, that is, immersion for six days in water and then keeping for twenty-one days at room temperature.

As cement is now often worked in a plastic condition, endeavors were made to test sample bodies made of plastic cement mortar. But all the results from many thousands of experiments were insufficient. No conformity could be attained. So it was decided to again make the briquettes out of ground-damp cement mortar the same as before. You are aware that the International Commission is trying for the testing of plastic cement mortar, but according to the results yielded by the experiments in Germany it will hardly be possible, especially if value be placed on agreement in the results of the tests, which is the chief thing.

In accordance with actual practice, the briquettes have been kept in the open air, exposed to heat, cold, rain and sunshine, and tested after twenty-eight days. The degrees of strength ascertained were very high, but did not at all agree with each other. This method was therefore abandoned.

Trials were then made with simply leaving the samples to harden at room temperature. But even with this method the tests made in different laboratories did not show the desired conformity. Dr. Michaels then proposed to imitate actual practice by placing the samples alternately in cold water, in the atmosphere, and in a box at high temperature, and testing after twenty-eight days of such treatment. The results were favorable, and much higher strengths were determined than by immersion in water. In spite of this, however, the method was not adopted, owing to it being so complicated. The method proposed by Dr. Goslich met the same fate; his suggestion was to let the bodies harden in a closed box

over burnt lime, while excluding the carbonic acid.

The only serviceable way of seasoning the samples proved to be the combined seasoning, that is, six days in the water and then twenty-one days in the atmosphere. This method was again checked by the making and testing of several thousand sample bodies.

Concrete work has chiefly to withstand pressure, and it was therefore decided to meet the natural conditions in this respect, and the pressure test was introduced as the conclusive test. The test for tensile strength is now only of minor importance, and has only been retained as a preliminary test for the building place. After seven days' water seasoning the minimum strength shall be at least 12 kilos per square centimeter.

As it is often important for the concrete builder to make sure as soon as possible of the quality of the cement, this circumstance was taken account of in the new rules by the introduction of a crushing test after keeping the cube one day in moist air and six days under water. The crushing strength must amount to at least 120 kilos per square centimeter.

As, however, with the laying down of the new rules it was especially a question of increasing the minimum strength after twenty-eight days, which up to then had amounted to 160 kilos per square centimeter, it became necessary to test all the German cements after the new combined seasoning, and to fix the minimum strength in accordance. The result was that in place of 160 kilos per square centimeter in force up to that time, the minimum strength was fixed at 250 kilos per square centimeter in the new rules. Otherwise the only further change made in the new rules was that the fineness of the cement was again increased, and not more than 5 per cent residue allowed on the 900-mesh sieve. You will be interested to hear that in Germany the grinding is done much finer. The residue on the 900-mesh sieve in 1909 averaged 1.39 for all the factories. Cement was bought from the trade which had only 0.1 per cent residue, and was thus very finely ground. Five per cent magnesia is permitted and 2.5 per cent sulphuric acid. These limits were, of course, not introduced until the conviction had been arrived at by numerous experiments that neither 2.5 per cent sulphuric anhydride nor 5 per cent magnesia are in any way harmful to the quality of the cement.

According to the new rules, an addition of 3 per cent is allowed to regulate the setting time, in consequence of rotary kiln cements often requiring more gypsum to make them slow than ring kiln cements. The new rules no longer contain any stipulation as to when the setting must be finished; they propose, as of much more importance, to fix the commencement of the setting, which has been put down as one hour at the outside. The definition of Portland cement has been drawn up very carefully in the new rules, so that it is impossible in the future for other hydraulic cements to be mistaken for it. It runs:

Portland cement is a hydraulic cement with not less than 1.7 parts in weight of lime (CaO) to 1 part in weight of soluble silica (SiO_2) plus alumina (Al_2O_3) plus oxide of iron (Fe_2O_3) made by fine grinding and intimate mixing of the raw materials, burning to at least incipient and fine grinding.

Owing to the tests for the new German rules being spread over a number of years, and to tests being made with all the German cements in ten different places, the Association of German Portland Cement Makers possess an enormous quantity of data on results of tests, which give very interesting conclusions as to the behavior of cements under different conditions of testing.

The 96 cements were tested in twelve different testing stations for both tension and pressure, according to the old and the new rules. It turned out that the results with combined seasoning agreed excellently.

The minimum of 120 kilos pressure strength was reached by all the cements with the exception of three. I would emphasize the fact that these tests were made before the new rules came into force, solely to ascertain how many cements at the time of the old rules corresponded to the higher standards of the new rules. Nearly all the cements already came up to the new standard.

Only one cement remained under 160 kilos, the standard of the old rules, while all cements with the exception of seven showed over 200 kilos pressure strength, so that it was decided to take this figure as the minimum strength. The seven factories had therefore to improve the quality of their cement to reach at least 200 kilos pressure resisting strength after twenty-eight days.

It is expressly stipulated in the new rules that this manner of testing with twenty-eight days' water-seasoning is only to be applied to those cements which are to be used for waterworks. Otherwise the combined seasoning is taken, that is, six days in water and twenty-one days in the air. As only nine of the 96 cements did not attain a strength of 250 kilos after twenty-eight days, it was decided to introduce 250 kilos as the minimum strength, in consideration that the manufacture of these nine cements could be so far improved as to bring them up to this limit. This test for pressure resistance with combined seasoning is thus laid down in the new rules as the most important and conclusive one. After its introduction all German cements passed the test made last year by the Association laboratory.

In scientific interest all cements have been tested in the same manner for tensile strength.

It is very interesting to see how the average strength of all the German cements tested in the Association laboratory during the years 1902 to 1909 considerably increased, in view of the probability of the introduction of new standards.

The average figure in 1902 was 240 kilos; then in 1904, 242 kilos; in the year 1906, nearly 249 kilos; and after a slight decrease in 1907, it amounted to 290 kilos in 1909 at the time of the introduction of the new rules. These are the values of the tests according to the rules valid at the time, which only called for 160 kilos.

But with the efforts constantly to make better cement, the average lime percentage of the German cements has also considerably increased of late years, so that it now amounts to 63.4. You see what interesting comparative material is produced by the work in the "Association" laboratory.

I think that from my remarks you will have formed an idea of the persistent and splendid manner in which for years the tests were carried out and which finally led to the establishment of the new German rules. A copious material, which probably exists in no other association of cement makers, has been collected, making it possible on the basis of the experience gained to establish new foundations for testing cement, which call for a better quality of cement, and which are more suited to actual practice than formerly. It is therefore to be hoped that the new German rules will stand proof for years and guarantee a satisfactory testing of Portland cement.

At 1:00 p. m. ten automobiles, escorted by Chairman Charles Apple, showed the sixty odd visitors the business section, the hill top view of the freight yards, packing house and other manufacturing sec-



CHARLES H. APPLE, CHAIRMAN OF THE LOCAL ENTERTAINMENT COMMITTEE.

ROCK PRODUCTS

tions of Kansas City, and spent the afternoon practically on the boulevards of Kansas City to give everyone a new idea of the beauty of the homes, boulevards and parks of this western city.

A dinner was served at the Lansberry Inn, Dallas, Mo., twelve miles out from Kansas City, and was a good, old-fashioned country dinner: fried chicken, mashed potatoes, strawberry shortcake, etc., and was one of the nicest affairs the delegates have attended at any meeting. Music was furnished by two real coons and the hour and a half occupied with the chicken gravy was well spent. Those delegates from the East who were not so familiar with the products of Kansas City were charmed with the growth of the town and were unanimous in the opinion that it will soon be one of the most beautiful cities in the United States.

Those in attendance at the meeting were as follows:

Attendance.

Allentown Portland Cement Company, Allentown, Pa., J. W. Fuller, R. S. Weaver, H. W. Wood and J. B. Murray.

American Portland Cement Company of New Jersey, Philadelphia, Pa., C. H. Camm.

Ash Grove Lime & Portland Cement Co., Kansas City, Mo., W. B. Hill, O. J. Hill, L. T. Sunderland, J. F. Pollock.

Atlas Portland Cement Company, New York, N. Y., Chas. A. Kimball, W. A. Holman.

Choctaw Portland Cement Company, Hartshorne, Okla., B. E. Allison.

Continental Portland Cement Company, St. Louis, Mo., David A. Marks.

Dewey Portland Cement Company, Kansas City, Mo., F. E. Taylor, H. F. Tyler, F. L. Williamson, Mr. Dwight.

Dixie Portland Cement Company, Copenhagen, Tenn., Richard Hardy, L. L. Northrop.

Edison Portland Cement Company, New York, N. Y., W. S. Mallory.

Fredonia Portland Cement Company, Fredonia, Kans., F. H. Patterson.

Great Western Portland Cement Company, Kansas City, Mo., J. W. Wagner, Charles H. Apple, Lindley Apple, Chas. L. Johnson, P. H. Bunn.

Hartranft Cement Company, Philadelphia, Pa., Wm. G. Hartranft.

Iola Portland Cement Company, Iola, Kans., J. A. Wheeler, H. C. Koch, H. Struckmann.

Iowa Portland Cement Company, Des Moines, Iowa, J. C. Burch, C. B. Condon.

Lawrence Cement Company of Pennsylvania, Siegfried, Pa., W. L. Sperry.

Marquette Cement Manufacturing Company, LaSalle, Ill., Geo. S. Bartlett.

Monarch Portland Cement Company, Humboldt, Kans., O. M. Connet, T. F. McLaren, W. H. Jennings.

Northwestern States Portland Cement Company, Mason City, Iowa; Peninsular Portland Cement Company, Western States Portland Cement Company and Southwestern States Portland Cement Company, W. F. Cowham, J. W. Shove.

Oklahoma Portland Cement Company, Ada, Okla., Adam L. Beck, Geo. L. Kice, Wm. L. Whitaker.

Portland Cement Company, Denver, Colo., Whitney Newton.

Phoenix Portland Cement Company, Nazareth, Pa., Wm. G. Hartranft.

Southwestern States Portland Cement Company, Dallas, Texas, B. M. V. LaRue, C. B. McVey.

Texas Portland Cement Company, Cement, Texas, F. R. Bissell, L. L. Griffith, Mr. Moore, H. H. Ward.

U. S. Portland Cement Company, Kansas City, Mo., I. M. Yost.

United States Portland Cement Company, Denver, Colo., J. E. Zahn.

Union Sand & Material Company, St. Louis and Kansas City, A. H. Crane, Jr., H. P. Johnson, D. M. Armstrong, N. H. Smith, T. J. Morgan.

United Kansas Portland Cement Company, Iola, Kans., Geo. E. Nicholson, W. S. Goodin, T. C. Feague.

Universal Portland Cement Company, Chicago, Ill., Edward N. Hagar, Morris Metcalf, B. F. Affleck, J. C. Van Doorn, J. P. Beck, C. W. Boynton.

Portland Cement Company of Utah, Salt Lake City, Utah, L. M. Bailey.

Virginia Portland Cement Company, New York, N. Y., R. W. Kelly.

Vulcanite Portland Cement Company, Philadelphia, Pa., W. D. Lober, Albert Moyer.

Wabash Portland Cement Company, Detroit, Mich., Bethune Dunfield.

Western States Portland Cement Company, Independence, Kans., A. Steinmetz, E. R. Stapleton.

Canada Cement Company, Montreal, Que., W. H. Ford.

NOTES OF THE CONVENTION.

Following the convention of the cement manufacturers, notice was received that the entire plant and assets of the Lumbermen's Portland Cement Company were sold at public sale by C. H. Apt, the receiver, at the plant in Carlisle. The property was bid in by C. L. Hogan and Arthur W. Burns, of Kansas City, representing the reorganized company, for \$268,000.00. As soon as the sale is approved by the court the plant, now partially constructed, will be completed and operated. The company has been in the hands of a receiver for about six months.

Norman B. Fraser, president of the Chicago Portland Cement Company, has been very ill for some time. This and the fact that one or two others were sick, prevented the attendance of J. U. C. MacDaniel at Kansas City.

Among the prominent machinery and equipment companies represented were the following: R. O.

Kohler, Lehigh Steel Clutch Company, Catasauqua, Pa.; H. E. Grimm, Edgar Allen Manganese Steel Company, Chicago, Ill.; Horace G. Kimble, Kent Mill Company, New York, N. Y.; H. B. Eldridge, Bradley Pulverizer Company, Boston, Mass.; C. H. Cole and D. C. Morrow, United Iron Works, Springfield, Mo.; J. M. Tucker, the Ryerson Company, St. Louis, Mo.; J. B. Mendenhan, National Lead Company, St. Louis, Mo.

W. H. Ford, sales manager of the Canada Cement Company, when asked regarding the situation in Canada, particularly in reference to the cement famine and the prevalence of high prices across the border, made the following interesting remarks:

"Business is good, there's no cement famine, never was. It's true, navigation was more than two weeks late in opening this year, causing in the west only a temporary shortage. There was never any shortage elsewhere."

"All our contracts are made subject to the act of God and other conditions beyond our control, yet the newspapers don't seem to give much thought as to the whys and wherefores. It's news, I presume, they want. Seems funny to speak of a cement famine with two plants idle and large stocks on hand."

"About high prices?—only another case of newspaper talk. Everyone who knows anything about such matters knows and knows well, too, that prices are lower today than ever before in Canada—barring a short period during 1909 when owing to price cutting between certain companies reductions were made temporarily; but even so, the average price for that year was only two cents lower than it was last year, 1910. This year prices average about ten cents lower even than they did last."

"In Winnipeg, which you speak of in comparison with Minneapolis, you must consider that the freight rate from our nearest mill to Winnipeg is 29¢ per hundred pounds, while Minneapolis enjoys a 5¢ rate from nearest mill; or a difference of 84¢ per bbl. This you see explains that what some newspapers have said don't echo the sentiments of the people. I spent from December 1st to April 15th visiting the trade from coast to coast, which is the third time I have done this in four years, and I tell you, sir, that buyers of cement are more satisfied today than they ever were before and conditions are getting better all the time."

NEW YORK CEMENT NEWS.

New York, June 15.—The general conditions in the local cement trade are unchanged since our last report. Dealers reported the demand as having been fairly good during the past month. Traders, however, are getting a higher price for cement and are doing a better business than they were a year ago. The trade is anxiously awaiting the awarding of the contract for the construction of the Tri-Borough subway, as about 3,000,000 barrels of cement will be used in the building of same.

The contracts to supply 820,000 barrels of cement to be used in the construction of the deep pressure tube which will carry water from the Catskill aqueduct throughout New York city have not been awarded yet, but cement men expect them to be let some time next month.

The export movement in cement continues to be brisk and is well above the average for this time last year.

E. F. Miller, of the Lawrence Cement Company, stated: "The demand for cement during the past month was fairly good. Prices remain unchanged and are quoted 80 cents in bulk at mill. The prospects are not very promising, at the present time, but as soon as work is commenced on the subways, where about 3,000,000 barrels of cement will be used, then the trade will be kept on the jump."

The Knickerbocker Portland Cement Company, No. 1 Madison avenue, started its plant at Hudson early in the month. The capacity of the plant will ultimately be 3,000 barrels per day. The cement is a light gray color and promises to find a ready market. Already many large orders have been booked by this company, the latest to enter the eastern market.

E. B. Morse, of the Frank B. Morse Company, said: "General conditions in the local cement market have not been subject to changes of consequence during the past month. The demand continued along fairly active lines with prices unchanged. The month of July is, as a rule, dull, but we expect business to improve by the middle of August or the early part of September."

S. Wells, manager of the New York office of the McCormick Waterproof Portland Cement Company, said: "We have received a very satisfactory amount of business during the past month and conditions on the whole have been very good. We have demonstrated to the trade that our

waterproofing is a bona fide proposition and many who were skeptical at the beginning are now our warm advocates. We have a few lines out and the prospects are brighter than for some time past."

The following large shipments of cement were noted from New York during the past month: The steamer Antilla cleared for Cuban ports on May 10 with 1,875 barrels, valued at \$3,000.00, and the steamer Santa Marta for Kingston with 1,000 barrels, valued at \$1,300.00; May 11 the Paloma, for Cuban ports, with 1,100 barrels, weighing 400,000 pounds, valued at \$1,460.00; May 13 the Berwind, for Porto Rico ports, with 3,152 barrels, weighing 1,250,000 pounds, valued at \$4,012.00; May 17 the Zulia, for Maracaibo, Venezuela, with 1,000 barrels, weighing 400,000 pounds, valued at \$1,300.00; the Alm, for Havana, with 6,000 barrels weighing 2,280,000 pounds, valued at \$9,600.00; the Yumuri, for Cuban ports, with 4,625 barrels, weighing 1,850,000 pounds, valued at \$7,450.00; May 18 the Canada, for Cristobal, Canal Zone, with 144,624 bags, weighing 14,462,000 pounds, valued at \$57,850.00, and 2,700 barrels, weighing 1,080,000 pounds, valued at \$7,450.00; May 19 the Georgia, for Haytian ports, with 1,200 bags, valued at \$408.00; May 20 the Cristobal, for Cristobal, Canal Zone, with 163,320 bags, weighing 16,320,000 pounds, valued at \$65,328; May 22 the schooner Republic, for San Juan, Porto Rico, with 4,500 barrels, weighing 1,500,000 pounds, valued at \$5,655.00, and the Agenoria, for Cristobal, Canal Zone, with 107,176 bags, weighing 10,717,600 pounds, valued at \$42,810.00; May 23 the schooner James T. Maxwell, for Ponce, Porto Rico, with 2,000 barrels, weighing 800,000 pounds, \$2,560.00; May 24 the Alianca, for Cristobal, Canal Zone, with 500 barrels, weighing 200,000 pounds, valued at \$650.00; the Caracas, for La Guayra, with 1,000 barrels, 400,000 pounds, valued at \$1,380.00, and to Porto Cabello with 500 barrels, weighing 200,000 pounds, valued at \$650, and the Seneca for Cuban ports with 1,000 barrels, weighing 400,000 pounds, valued at \$1,600.00; May 24 the Cubana, for Cuban ports, with 2,325 barrels, weighing 930,000 pounds, valued at \$3,154; May 26 the Esperanza, for Havana, with 2,250 barrels, weighing 900,000 pounds, valued at \$2,258.00; May 26 the Melderskin, for Chilean ports, with 1,000 barrels, weighing 400,000 pounds, valued at \$1,350, and to Peruvian ports with 3,000 barrels, weighing 1,200,000 pounds, valued at \$3,750.00, and the Prinz August Wilhelm, for Kingston, Jamaica, with 500 barrels and 500 bags weighing 262,500 pounds, valued at \$819.00; May 27 the Havana, for Havana, Cuba, with 500 barrels weighing 200,000 pounds, valued at \$595.00, and the Bantu for Montevideo with 1,000 barrels, weighing 380,000 pounds, valued at \$2,000.00; May 29 the Crown of Grenada, for Grenada, with 500 barrels, weighing 200,000 pounds, valued at \$670.00, and the Alpha, for Botwood, Newfoundland, with 38,000 bags, weighing 3,610,000 pounds, valued at \$11,593.00; May 31 the Ancon, for Cristobal, Canal Zone, with 120,680 bags, weighing 12,680,000 pounds, valued at \$48,242.00; the Olinda, for Cuban ports, with 650 barrels, weighing 256,000 pounds, valued at \$980.00; the Times, for Havana, with 1,375 barrels, weighing 550,000 pounds, valued at \$2,200.00; the Almirante, for Colon, with 500 barrels, weighing 190,000 pounds, valued at \$655.00; June 1 the Santiago, for Cuban ports, with 750 barrels, weighing 300,000 pounds, valued at \$1,130.00; June 2 the Lavinia M. Snow, for San Juan, Porto Rico, with 2,000 barrels, weighing 800,000 pounds, valued at \$2,500.00; the Hoyle Bank, for Cristobal, Canal Zone, with 113,220 bags, weighing 11,320,000 pounds, valued at \$45,288.00; June 3 the Saratoga, for Havana, with 1,750 barrels, weighing 425,000 pounds, valued at \$1,950.00; June 7 the schooner Silver Leaf, for St. Andrew, N. B., Canada, with 12,800 bags, weighing 1,216,000 pounds, valued at \$4,810; June 8 the Prinz Sigismund, for Port Columbia, with 1,350 barrels, weighing 500,000 pounds, valued at \$1,588.00; June 9 the Maracas, for Trinidad, with 500 barrels, weighing 300,000 pounds, valued at \$383.00; the Florizel, with 2,000 bags, weighing 190,000 pounds, valued at \$711, and the Euxinia, for Cristobal, Canal Zone, with 131,840 bags, weighing 12,184,000 pounds, valued at \$48,746.00.

LARGE SALT AND CEMENT SHIPPERS.

Milwaukee, June 16.—H. Kuenzli & Co., 306 Watkins building, have been for years large shippers of salt and cement. They handle the product of the Alpha Portland and the Huron Portland Cement companies. A few years ago the railroads made a differentiation between the freight rates of cement and salt. Since then they have not shipped as much cement to the trade in their territory as in former years. They report business in salt as usual so far this year, but say a decided improvement has been felt the last two weeks. Henry Kuenzli and John McGee are the members of this firm.

KNICKERBOCKER.

The New Plant of the Knickerbocker Portland Cement Co., at Hudson, N. Y., Starts out Under Most Auspicious Circumstances.

The Knickerbocker Portland Cement Company commenced operations at Hudson, New York, the first part of June, thus establishing a record for speed in the erection of a three thousand barrel plant. Ground was broken on August 1st of last year, and no time was lost in the construction of

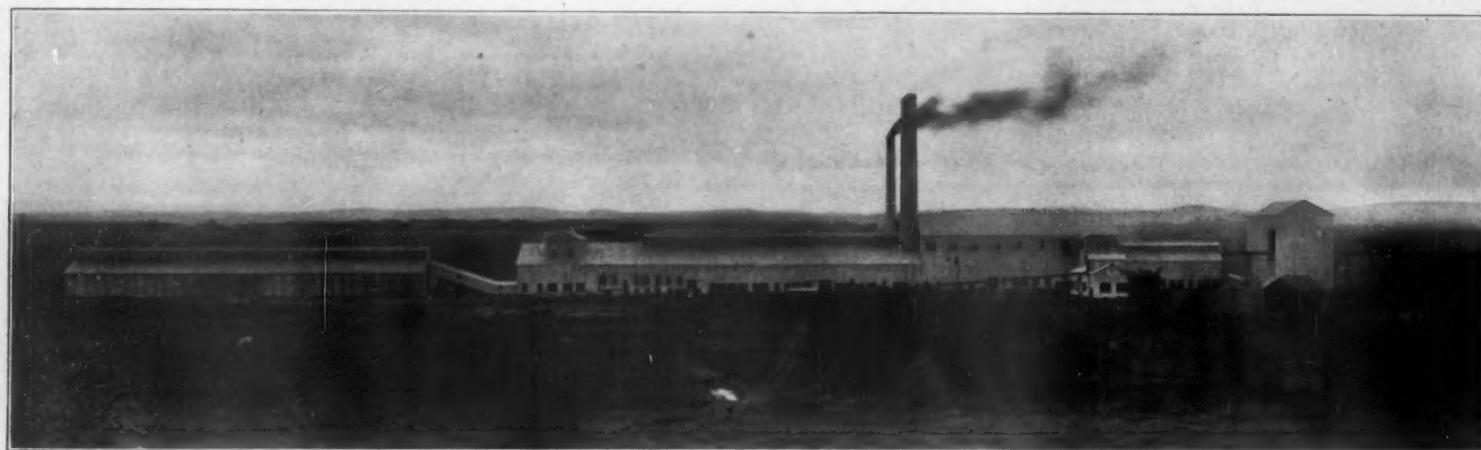
drawn by a locomotive to the crusher plant, about 1,500 feet distant, where the rock is dumped from the cars into a large crusher without additional handling. This department was started about the middle of May, so that a supply of material was on hand when the kilns were ready to operate. Crushing is done by a mammoth gyratory crusher with a 42" opening. The material is elevated from this into a large storage bin from which it is discharged by gravity into three smaller crushers; additional storage for about forty thousand tons of surplus crushed rock is also provided. From the small crushers it is conveyed on a belt to large dryers, from which it is discharged and elevated into an immense steel storage bin, thence to automatic weighing machines where the shale and rock are accurately weighed, then elevated to a large steel

it is distributed in storage bins. From the storage bins the cement is packed into cloth or paper bags by machinery. Railroad sidings parallel the warehouse, thus facilitating the loading into cars.

In a separate building is the power plant, in which is installed modern machinery for the production of electric power at the least possible cost, consisting of four 600 h. p. water tube boilers, and two 2,000 k. w. Curtis steam turbines of the latest approved type, with direct-connected generators to supply the electrical current by which all of the cement-making machinery in the plant is driven, each machine having its individual motor.

Abundance of water for the entire plant's requirements is supplied by a stream running through the property.

To insure the highest quality of Portland cement



GENERAL VIEW OF THE KNICKERBOCKER PORTLAND CEMENT COMPANY'S PLANT AT HUDSON, N. Y.

the mill, built entirely of concrete and steel. For simplicity of arrangement it stands without a peer.

The location of the mill and its shipping facilities are ideal. The natural products which are used in the manufacture of Portland cement are on the company's property with the exception of the coal, which is brought from Pennsylvania. The company owns about six hundred acres of land adjoining the historic city of Hudson, N. Y. The limestone and shale are in underlying strata. The company is manufacturing Portland cement, finely ground, of a light gray color and of the finest quality, exceeding the requirements of the standard specifications adopted by the American Society for Testing Materials.

Not only has the plant been erected in record time, but the terminals and shipping facilities were complete and ready the day the first shipments were to be made. The company not only has its own side tracks connecting with the Boston & Albany Railroad, but also with the New York Central Railroad, as well as its own dock, where cement can be loaded into vessels for the coast trade, or barges for transportation on the river or by canal.

The Knickerbocker Portland Cement Company has taken advantage of the natural location of the excellent limestone, shale and clay deposits, as well as the water supply. The quarry, which required no stripping, already has a face about 1,000 feet long. A steam shovel of large capacity is used in the quarrying operations, the material being loaded on dump cars holding about 15 tons each. These are

storage bin over the giant Griffin mills, which are fed by gravity. These are of the very latest type, and are among the most efficient machines manufactured for the pulverizing of cement materials.

The product coming from the Griffin mills is elevated and made into a slurry, which is stored in large tanks. The wet process of mixing materials in the manufacture of Portland cement is being universally adopted in Europe and America by the modern plants, owing to the fact that it is considered by many to be the only method by which an absolutely thorough mixture can be obtained, insuring a cement that is always uniform. As uniformity is one of the greatest considerations to Portland cement consumers, it will readily be seen that Knickerbocker Portland cement, by this method, takes its position among the leading brands of the East.

After the mixture has been checked and approved by the chief chemist, the slurry flows by gravity to three immense kilns, each 10 feet in diameter and 175 feet long, lined with special fire brick. Each kiln has a capacity of over a thousand barrels per day. The resultant clinker from the kilns is discharged by gravity directly into three large coolers. Leaving the coolers, it is elevated and weighed automatically.

From the weighing machines the clinker is elevated into an immense storage bin over the Griffin mills, to which it is fed by gravity for final grinding, from which the cement is discharged on to a belt conveyor and carried into the warehouse, where

it is necessary that a thorough system of analyses and tests be adopted. The raw materials, as well as the cement as it passes through the different processes, are tested by chemists, and the results are checked by the chief chemist, Adolph Neu, who approves of the product. As a still further precaution an additional test is made before shipment, as is required by engineers. No cement is shipped until it receives the final approval of the physical testing department, said department being entirely independent of the chemical and manufacturing departments.

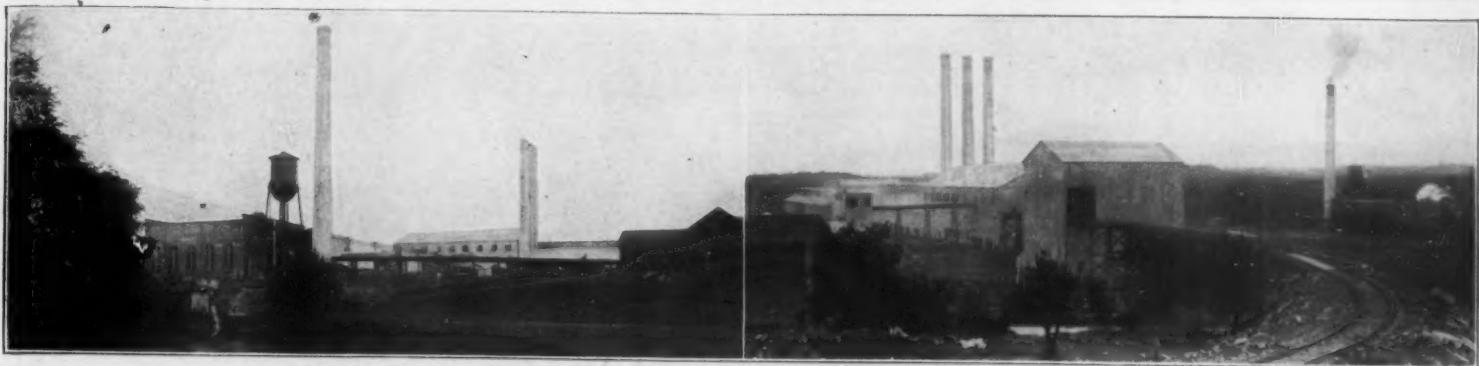
The Knickerbocker Portland Cement Company has started out under the most auspicious circumstances, in that the heads of the operating departments are men of many years of practical experience in the manufacture of Portland cement, who have become experts in their particular field. In fact, although it is a new company, with a new plant, it is an old organization.

M. H. Hammond, the general superintendent, who both designed and superintended the construction of the plant, deserves to be congratulated upon its efficiency and its successful completion in so short a time. While not a stranger in the cement business, his connection with the Knickerbocker plant marks his advent into the East. He was with the Iola Portland Cement Company at Iola, Kansas, when that plant was built, and later, through his meritorious work, became general superintendent.

S. H. Bassett, president of the company, is a man of practical experience and executive ability. He



GENERAL VIEW OF THE KNICKERBOCKER PORTLAND CEMENT COMPANY'S QUARRY AT HUDSON, N. Y.



TWO VIEWS OF THE KNICKERBOCKER PORTLAND CEMENT COMPANY'S PLANT AT HUDSON, N.Y.

was president and general manager of the Iola Portland Cement Company for many years, until the company was sold, when he returned to his home in the East and became president and general manager of the Knickerbocker Portland Cement Company. Many prominent business men, bankers and capitalists of the East and Middle West are stockholders in this enterprise.

The general office of the company is located at Hudson, N.Y., and the general sales office is on the nineteenth floor of the Metropolitan Life Insurance building, 1 Madison avenue, New York City. The heads of the sales department have had wide experience in the successful selling and distribution of Portland cement.

DO YOU BELIEVE IN SIGNS?

One would think in traveling over the country that the average manufacturer did not believe in signs; in fact, it would seem that he has a positive aversion to them since it is sometimes impossible to find even so much as the name of the firm on the building, to say nothing of the kind of goods or machinery manufactured. Some concern seem to think that it is a confession of weakness to put a sign out. They take it for granted that everyone knows them. They actually think they are too big for a sign. What a mistaken idea. A good sign is the best and cheapest advertisement a firm can have, even if the factory or mill is located out in the woods. When, however, the plant is located on a railroad carrying thousands of passengers every day it is a positive waste of money not to have a striking sign that will catch the eye of every passenger. We have seen many catchy signs on our travels which must be worth thousands of dollars annually as advertisements since they attract the attention of everybody. But we have also seen many large factories covering acres on which not a single sign was discernible. This very concern may be spending thousands of dollars every year in trade papers, magazines and daily papers trying to popularize a brand or a make of goods and yet overlook the very best advertising medium they could possibly get.

OVERLOOKING OPPORTUNITIES.

How many men crowd into the big cities and work for small salaries who have left their homes in small cities where the opportunities for success were ten times as great. They will say that a stranger can come into the town and start something with a greater show of success than a home boy. But does the home boy always see the opportunities? Does he realize what kind of a business will pay? He is too apt to say that he knows it wouldn't pay and that settles it. The stranger comes to town, takes the chance and succeeds.

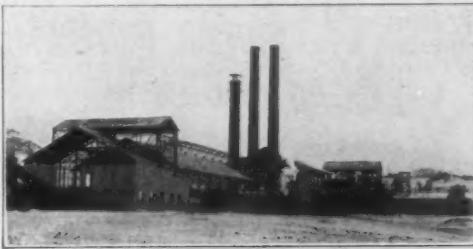
Local bankers are sometimes to blame for the lack of development in their cities. Knowing a man too well they sometimes hesitate to give him a line of credit. The successful banker is the man who sees the opportunity, finds the man, extends him a line of credit and helps him to succeed. It is the only way to build up a community and does more than all the commercial bodies combined to make a really thriving and prosperous city. A city where all the big enterprises are controlled by outside capital will have a much slower growth than one where all the capital is home capital. In the latter case all the profits stay at home, in the former the profits go to enrich other cities. In every city you will find thousands of people looking for investments, who will be taken in by every "Get Rich Quick Wallingford" who chances to come along but who will close up like a clam at the mere mention of a local enterprise.

If the figures in any small city could be secured showing the amount of money which is invested in mining stocks and other risky ventures they would be startling. This money seldom, if ever, returns,

and the men who lose it rarely ever say anything about it, so that it is never known. The best way to make a thriving city is to encourage the young men to stay at home by giving them opportunities to make money at home and by backing them with the necessary capital to start new enterprises at home.

The Daily Consular and Trade Reports issued by the Bureau of Manufactures, Department of Commerce and Labor, Washington, D.C., contains the following items:

No. 6763. Crushing and pulverizing machinery.—A report from an American consular officer in an European country states that a business man in his district is in the



VIEW OF KNICKERBOCKER PORTLAND CEMENT COMPANY'S PLANT DURING COURSE OF ERECTION. PHOTO. TAKEN JAN. 1ST.

market for a crushing machine and pulverizing machine for marble, capacity 1,200 kilos per hour, suitable for a 10-horsepower steam engine. Another business man wants a bone-pulverizing machine, capacity 500 kilos per hour. Correspondence in both instances should be in the French language.

No. 6780. Machinery for making concrete blocks for building.—An American consular officer in the Levant reports that he has received a request from a local business firm to obtain some illustrated catalogues from American manufacturers of machinery for making concrete building stones of sand, cement, etc. The firm desires, in addition to the catalogues, full particulars, with prices, etc.

No. 6785. Metal laths and corner beads.—A report from an American consular officer in Canada states that a local firm dealing in building materials desires to be put in communication with manufacturers of metal laths and corner beads with a view to representing some manufacturer of this class of goods in that locality.

No. 6794. Machinery for making concrete blocks.—A responsible business concern in European Turkey desires



OFFICE OF THE KNICKERBOCKER PORTLAND CEMENT COMPANY AT HUDSON, N.Y.

to get in touch with persons in the United States who manufacture machinery for making concrete sections or blocks, solid and hollow, used in constructing buildings. Illustrated catalogues, price lists and quotations f.o.b. vessel New York are desired. Correspondence may be in English.

Dudley O. Sayer, of New Haven, Vt., writes ROCK PRODUCTS under date June 3: "I secured a position with the Greer Machine Company, New Haven, Vt., and took charge May 1. I have been so busy I have not thought of writing you before. Please accept my thanks."

LOUISVILLE RETAILERS.

Louisville, Ky., June 17.—Dealers in building materials are experiencing an excellent season, as weather conditions have been favorable to operations and the number of jobs under way has been large. It continues to be evident that Louisville is to have one of the best building seasons in its history, and this of course means that the retailers will come in for their share.

A good many trades have been inclined to grumble because of the weather, which has been dry and almost rainless, as this has tended to injure the crops. As far as the immediate situation was concerned, however, this was a good thing for the retailers, as it meant that construction work could be carried forward without any interruption.

Building during May was heavy, relatively, though a gain of but 2 per cent was scored compared with the corresponding month of last year. As March and April counted with big gains, however, the more modest record of May was not disregarded, as it meant that building projects were continuing to come out, and that many jobs which had been talked of were to become realities.

A big building which was announced and undertaken in short order is the 10-story office structure to be erected for Harry B. Lewman and others by the Falls City Construction Company at Center and Jefferson streets. It will cost \$300,000, and the contracts will be let late this month. Bids for the steel work will be closed June 19. It is reported that the present site of the Elks' Home on Walnut street is to be disposed of and that a 99-year lease will be secured by a syndicate of local capitalists who will erect a large building on it. A large apartment house is to be erected on the site of the old Standard Club on Fifth street near Chestnut, Edward O. Poli, of Hamilton, O., having purchased it for that purpose. These are among the chief new projects which have developed during the month.

Building supply men have agreed not to attempt to secure a construction in the courts of the mechanics' lien law, the present draft of which is far from satisfactory. Efforts will be centered instead upon the work of getting another law through the state legislature when it meets next January. The former measure gave the material man six months within which to file notice of intention to exercise the mechanics' lien. The new law makes it necessary to do this "immediately." It is obviously impossible to know at the time of the delivery of the material whether it will be necessary to exercise a lien, and the requirement has therefore been a harsh one. The new law will provide that sixty days may elapse during which notice may be given, and it is believed that this will prove satisfactory to everybody.

The National Roofing & Supply Company, said Edward Streicher, is doing a good deal of roofing work, gravel and composition roofs being put down principally. For the past few weeks the situation has been less active, but it is believed that this will be changed within the next week, as a lot of business is being figured on.

The Culley Cement Block Company is developing a big business in connection with its cement department, handling the Kosmos line. A lot of trade is being secured, and the Kosmos brand is making a big hit with users.

George F. Meldrum, of the Union Cement & Lime Company, reported trade only fair. He said that general business conditions are rather quiet, and attributed the local situation to this. There are a good many projects ahead, he pointed out, but as the season is getting on much of this work will have to be pushed when it is started in order to complete it before bad weather sets in. Lime trade is rather dull, also.



The National Lime Manufacturers' Association

Meets Semi-Annually.

OFFICERS.

William E. Carson, Riverton, Va.	President
King McLanahan, Hollidaysburg, Pa.	1st Vice-President
H. A. Buffum, Rockland, Me.	2nd Vice-President
Geo. E. Nicholson, Manistique, Mich.	3rd Vice-President
F. K. Irvine, Chicago.	Secretary
C. W. S. Cobb, St. Louis, Mo.	Treasurer
Wm. E. Carson, Chas. Warner, Walter Sheldon,	Executive Committee

Littleton M. Sturgis, Gaither Building, Baltimore, Md., will erect a large plant for manufacturing lime at Drum Point, Md.

Jesse Frye, J. J. Maney and Stuart Mannell have established a hydrated lime plant in the Cascade mountains, near Mount Baker, in Washington.

The Commercial Lime Company has been incorporated at Salinas, Cal., by Hugh Center, Burke Corbet and J. R. Selby, with a capital of \$22,000.

The Southern California Lime & Cement Company has been incorporated at Los Angeles, with a capital stock of \$50,000, by W. J. McGraw, J. C. Stick and others.

The Allwood Lime Company has been incorporated at Manitowoc, Wis., with a capital stock of \$25,000. The incorporators were Joseph J. Wirtz, Charles Line and Frank E. Jenswold.

The Sheepshead Lime & Cement Company has been incorporated at Los Angeles, with a capital of \$500,000, by A. B. Sendner, Roderick Scott, B. A. Benjamin, Stanley Benedict and C. M. Rodgers.

The Alabama Limestone Company has been incorporated at Chattanooga, Tenn., with a capital stock of \$20,000. The incorporators were H. M. Smith, H. Hunter Smith, G. W. Nixon, J. P. Kendrick and W. M. Nixon.

The National Limestone Company, of Naginey, Pa., have a capacity of 1,000 tons of stone per day and 500 bushels of lime. They are contemplating the erection of several new kilns and will shortly install a hydrating plant.

The King Lime Fertilizer Company, of Brevard, N. C., is being organized by C. C. Good and R. Mays Cleveland, of Greenville, N. C., with a capital stock of \$250,000. The company plans to mine rock and manufacture lime for fertilizer.

The Yadkin Lime Company, whose general offices are at Winston-Salem, N. C., and whose plant is located at Lime Rock Siding, are very extensive manufacturers of agricultural and building lime. Their capacity is five cars of pulverized lime and forty tons of burnt lime per day. They are going to add a hydrating plant, and are in the market for a hoisting engine.

The Rush Tower Limestone Company, of St. Louis, Mo., own 200 acres of limestone on the Mississippi river, on the Frisco railway, Memphis division, 35 miles south of St. Louis. This property is located near the Ste. Genevieve, Mo., limestone district. It was purchased in 1908 by this company, but up to date it has never been opened up. Now that conditions are improving, it is probable that they will open up this property.

The Clearwater Lime Company at Orofino, Idaho, who have a capacity of 125 barrels per day, say: "Business has been pretty quiet, but we look for it to pick up in July, when good crops are expected all over the northwest." The Clearwater Lime Company are very much interested in the subject of burning with saw dust, as they are able to secure this material from some of the big mills adjacent. If any of our readers can give this company some information on this subject, we will be glad to have them do so.

CHICAGO LIME NEWS.

Chicago, June 20.—The market for lime in Chicago has been very active since the brick makers' strike was settled. It is not yet, however, up to the average for this time of the year. During the strike many contractors used second-hand brick for backing their buildings, and in doing so used considerable more lime than with new brick.

The price is holding up well and the lime manufacturers have nothing but good news to report concerning the future. Country trade was affected somewhat by the tie-up in Chicago, but this trade, too, is gradually returning to normal.

C. C. Bishop, secretary of the Marblehead Lime Company, stated concerning conditions: "Business is rather quiet with us just now. The unsettled conditions all over the country have had a lot to do with the slack demand. In large towns agitation hurts the demand, but in the smaller towns rarely affects trade. This year lime is not in as great demand as it was during the corresponding period of 1910. Things must change sometime and even now the outlook is not discouraging."

George C. W. Klippe, of the Chicago Union Lime Works, stated: "Business is fine this month. We have the contracts for lime in most of the skyscrapers in the downtown district, and all of them will use 150 to 200 barrels a day. The demand has materially increased since the brick strike was settled. The strike decreased our daily output for a time from 900 to 200 barrels, but everything is now looking favorable and we expect a continued good trade. The price is holding up fairly well."

PITTSBURGH LIME NEWS.

Pittsburgh, Pa., June 17.—The lime business is rather slow in Pittsburgh. Building lime especially is not selling as it should at this season and dealers are a little at a loss to explain why contracts for building are not being awarded more rapidly when estimates given are so low. It is between seasons for agricultural lime, as farmers are now very busy with their summer work and will not commence to haul lime again from the stations until about August. For these reasons all lime companies are slack just now, although the limestone people are furnishing a large amount of material for the county roads.

The National Mortar & Supply Company, of Pittsburgh, reports that its carload business from Gibsonburg, Ohio, is just fair. The plant is running full, but they are stocking up a little at present and getting ready for late summer trade in lime. The present shipments are about four cars a day. The company has recently installed electrical machinery and will have its plant in splendid shape in about three weeks.

The Rose Point Stone & Lime Company has been organized by Edwin F. Norris, Matthew Gunting and C. W. Rhoades at New Castle, Pa., to manufacture lime, crushed stone and limestone. Options which have lately been taken on limestone land near Rose Point, Pa., have been accepted and a switch will be run into the property one mile long from the Allegheny railroad.

The Beaver Valley Lime Company, of Ellwood City, Pa., is a new Beaver county concern with \$10,000 capital formed by W. C. Wickliffe and others. The company will manufacture lime and also quarry limestone on an extensive scale.

MILWAUKEE LIME NEWS.

Milwaukee, Wis., June 19.—Fire of unknown origin recently destroyed 2,000 cords of wood, a store room, office and boarding house of the Waukesha Lime & Stone Company, near Waukesha, Wis. The loss is estimated by Manager J. J. O'Laughlin at \$10,000.00.

The Speakes Lime & Cement Company, of Superior, Wis., has moved into its new building on Tower Bay slip. The company now owns excellent dock facilities.

The Sheboygan Valley Lime Company has been incorporated by Oshkosh, Wis., men with a capital stock of \$250,000 by H. M. Sweet, Harry E. Munger and Carl D. Jackson. The company will develop limestone deposits near Elkhart Lake, Wis.

The Allwood Lime Company, of Manitowoc, Wis., has been incorporated with a capital stock of \$25,000.00 by Benjamin E. Tompkins, L. A. Schmitz and E. S. Schmitz. The company has erected three new kilns and will build several other structures at once.

The Sheboygan Lime Works, of Sheboygan, Wis., has completed plans for the erection of a new \$3,000.00 warehouse. The structure, which will be 70'x110' in dimension, will be located in the heart of the city's distributing center and will have the best of shipping facilities.

NEW YORK LIME NEWS.

New York, June 15.—Nothing of interest occurred in the local lime trade during the past month. Dealers report a fair demand, but it is below the seasonal average. Collections are still reported slow. Dealers expect the usual dullness to prevail during July and August, but look for an improvement during the early fall months.

O. F. Perry, of the Rockland-Rockport Company, stated, "The demand for lime during the past month involved moderate proportions, but was below the average. Collections continue slow. The outlook, however, has improved during the past month and we expect a satisfactory business in the fall months. Quotations are unchanged and are as follows: 200-pound barrel, 92 cents; 300-pound barrel, \$1.02; 300-pound barrel, \$1.47; 350-pound barrel, \$1.62, in 500 barrel lots."

F. F. Comstock, of the Comstock Lime & Cement Company, said: "There is nothing of interest to report in the lime trade during the past month. Business continued along quiet lines and the usual seasonal summer dullness is expected to prevail during July and August. However, we expect conditions to brighten up in the early fall months."

E. B. Morse, of the Frank B. Morse Company, added: "Business in the lime industry has been going on in a quiet way during the past month and will undoubtedly be dull during the summer months. Collections are reported slow. We look for improvement, however, during September and October."

PHILADELPHIA LIME NEWS.

Philadelphia, June 15.—A more buoyant tone exists in the lime business during the last month. The operation work in rows of two-story dwellings continues uninterrupted, and the successful sales and renting of the two-story flat buildings in West Philadelphia have proved an incentive to erect similar style houses in Germantown, which movement will insure a much enlarged activity in building work throughout the year.

The Knickerbocker Lime Company, Incorporated, 24th and Callowhill streets, extensive handlers of lime, sand, cement, etc., reports considerable activity. All lines are active, which renders the outlook very promising for trading in building supplies.

INSTALLING KRITTER HYDRATOR.

The Potomac Refining Company are now opening up a limestone quarry on the Chesapeake & Ohio canal, near Harper's Ferry, W. Va. The analysis of this stone shows it to contain a very high-grade calcium lime, running considerably above 96 per cent calcium carbonate. An order has already been placed with The Kritter Company, of Chicago, for one of their largest hydrating plants. It is expected that this plant will be turning out hydrated lime by September 1st. The Kritter Company is endeavoring to rush the machinery along and install it in record time. It is expected that as soon as this plant is in operation others will be started. The Potomac company already has several kilns started and will build additional kilns this summer.

WILL BUILD HYDRATING PLANT.

Chicago, June 20.—Charles C. Kritter, of the Kritter Company, stated that prospects with them for the summer were very good. They are now designing a large hydrating plant for the Potomac Refining Company, near Harper's Ferry, W. Va. This plant is to be among the best of its kind in the country.

The machinery for the plant of the Lee Lime Company, at Lee, Mass., is nearly ready for shipment. This plant was built and equipped by the Kritter Company.

The Caliente Lime & Marble Company, incorporated last month at Fresno, Cal., has completed its organization, with Fred J. Stone as president. The company has 320 acres of land on Caliente creek, in the Tehachapi mountains, in which there is an exposed area of first class lime rock estimated at 15,000,000 tons. The company announces its intention to put in a lime plant, with the expectation of having the material on the market before the end of the year.

The Wiggins Crushed Stone & Sand Company, of Dayton, Ohio, has recently been incorporated in Columbus with a capital stock of \$65,000. The directors are Albert Emanuel, Elmer H. Wiggins, H. S. Anderson, Barry Murphy and A. L. McBride.



The Superior Sand & Gravel Company, of Utica, Mich., has incorporated with a capital of \$75,000.

The Superior Sand & Gravel Company has been incorporated at Detroit, Mich., with \$75,000.00 capital stock.

The Crystal Sand & Gravel Company, of Battle Creek, Mich., will erect a cement block plant at Level Park. The concern is capitalized at \$25,000.

The Iowa Sand & Gravel Company has been incorporated at Oskaloosa, with a capital stock of \$10,000. The incorporators were George H. Carlon and Harry F. Carlon.

The Milwaukee Northern Gravel & Sand Company, of Milwaukee, Wis., has been incorporated with a capital stock of \$30,000 by Herman Welcker, William Bremer and Hugo Kraenzlein.

The Noel Sand & Gravel Company has been incorporated at Kansas City, Mo., with a capital stock of \$10,000. The incorporators were L. M. Owings, Charles Werner and W. F. Hammond.

The New Era Gravel and Development Company has been incorporated at Houston, Tex., with a capital stock of \$15,000. The incorporators were T. A. Shearer, R. B. Shearer and T. C. McCain.

The National Malleable Castings Company, of Dundee, Ohio, are extensive crushers of silica rock for the purpose of making sand for their own use. They have a capacity of 250 tons per ten-hour day. They do their crushing with a No. 5 Austin, and rolls will do the finishing work. They are at present installing two sets of 36"x16" Sturtevant rolls.

The Superior Sand & Gravel Company have placed a contract with James H. Phinney & Co., Detroit, Mich. (local representatives of the Jeffrey Mfg. Co.), for a Shoemaker & Casparis elevating and loading machine. The machine will be placed in the company's pit near Utica, Mich., and will dig, elevate, screen and wash from 15 to 20 40-ton cars of sand and gravel per day.

NEW YORK SAND AND GRAVEL NEWS.

New York, June 15.—The demand for sand and gravel has fallen off slightly during the past month, and dealers report a slow and quiet market. Prices remain unchanged, although there were rumors of a decline. Dealers, however, look for big business during the fall months when the excavation of the deep pressure tube which will distribute water from the Catskill aqueduct throughout three boroughs of the city of New York will be under way.

More than 70 per cent of the excavation work on the Fourth avenue subway in Brooklyn has been finished, according to the Public Service Commission. On portions, where the excavation was completed some time ago, the concrete and steel construction has advanced rapidly. The route covers four miles, the road being four-tracked all the way, and the cost, which is being paid entirely by the city, is to be \$15,886,381.00. It is estimated that it will take about a year and a half to finish the line.

J. N. Ely, of the Crescent Sand & Gravel Company, said: "We have experienced a very good business during the past month and the sand and gravel line on the whole is in a satisfactory condition. The demand for sand and gravel continued on a steady basis and the call for gravel was so much greater than for sand that we experienced difficulty in filling our orders for this item. Prices remain unchanged. We look for a big business in the fall."

W. J. Timberman, general manager of the Goodwin Sand & Gravel Company, added: "The demand for sand and gravel during the past month was slow and not as good as the previous month. I understand that this state of dull affairs exists all over the country. I was talking to out-of-town friends from Chicago and San Francisco and they stated that business there was very poor and almost at a standstill. The Supreme Court deci-

sions notifying the large corporations that there must be an adjustment of their business no doubt has made other corporations go slow and adjust their affairs also. However, these conditions cannot last long and we are optimistic as to the future and expect an improvement in business in the near future. The price of sand and gravel remains unchanged and 25 cents a cubic yard is quoted for sand and gravel is bringing 75 to 85 cents, alongside in Manhattan. Outside of this district we have to add additional towing charges."

Charles A. Fox, general manager of the Murray & Reid Company, stated: "Business during the past month in the sand and gravel trades was somewhat smaller than that of the preceding month. Efforts to make the situation optimistic are not particularly successful and the outlook cannot be described as bright. Prices remain unchanged. When public work is let conditions are expected to improve."

LOUISVILLE SAND AND GRAVEL NEWS.

Louisville, Ky., June 17.—Sand men have been hard at it during the past month on account of the large number of concrete jobs which have been under way, making a heavy consumption of sand necessary. Diggers of the leading companies have not only been working full time in an effort to keep stocks up to normal, but some of them have been working 24 hours a day, the night shifts developing an ability to turn out as much stock as the day forces.

The Nugent Sand Company has been exceedingly busy, as it has landed some of the biggest jobs which have been in the market, and is rapidly coming to the front as one of the leading sand concerns of Louisville. It has the contracts for the new Watterson hotel, the Weissinger-Gaulbert apartment house and the big apartment house being erected by the Fourth Avenue Realty Company. In addition it has a number of street contracts, and is delivering fifty yards a day on the wharf, which is being reconstructed. Its digger is being kept busy day and night.

Business with the Ohio River Sand Company was reported good. There is a fair volume of street work, and the company is also getting some of the business on reinforced concrete buildings. Both diggers are at work.

The Court of Appeals recently handed down an interesting ruling in the case of the Newport (Ky.) Sand Bank Company against the Monarch Sand Mining Company, in which the court upholds the right of the Newport company to the use of its trade names, such as "No. 3 Newport," "No. 4 Newport," etc., and declaring that other sand producers must not designate their sand with those names. The Newport Sand Bank Company created the terms and has been using them for years, so that it has established its title to their exclusive control.

PITTSBURGH SAND AND GRAVEL NEWS.

Pittsburgh, Pa., June 16.—The Iron City Sand Company is showing its customers some very handsome red wagons, which have recently been put in service. Its work is increasing right along.

The Philipsburg Silica Sand Company has been organized at Philipsburg, Pa., with a capital of \$200,000, and will build a crusher and pulverizer plant soon to furnish sand for a glass factory.

The Rodgers Sand Company is working several diggers on the Ohio and Monongahela rivers. Recently one digger has been employed constantly opposite Emsworth on the Ohio river. The general trade is said to be improving and some good sales are being made for government projects and bridge work along the three rivers.

The Ridge View Sand Company, of Oil City, Pa., is getting well underway and will soon be shipping high-grade silica sand for steel foundry use in good quantities. Its plant is located at Ridge View, five miles from Oil City, and has a capacity of 600 tons per day. The officials of the company are: C. W. Coulter, president; Stuart H. Simpson, vice-president; Samuel W. McCuen, secretary and treasurer, and R. L. Rhoades, superintendent. Its sand analyzes as follows: Silica, 99.108 per cent; aluminum, 0.585 per cent; iron oxide, 0.075 per cent; lime, 0.101 per cent; and magnesia, 0.116 per cent.

The Barnes Sand & Gravel Company, at Wakefield, a river point near Portsmouth, Ohio, will be ready for operation in its new plant in about thirty days. The cost of this plant is \$7,000 and it will use crude oil for fuel.

The Ariel Sand Company has been organized at Scranton, Pa., by Thomas B. Howe, John F. Seragg, Robert C. Ruthben and others to do a general business in sand, gravel and asphalt.

CHICAGO SAND AND GRAVEL NEWS.

Chicago, June 20.—The sand and gravel operations in Chicago during the past month were not up to their usual standard. As was the case in other lines of building materials, the brick strike tied up building to such a degree that there was no demand whatever, for a time, for sand and gravel. Construction work on the skyscrapers in the "Loop," which will use many cars of these materials, was at a standstill. Prices followed the sinking demand and are now at a low level, but during the past week have shown signs of improvement. Dealers in sand and gravel have been shipping and hauling considerable quantities since the settlement of the strike on June 10, and the business is gradually climbing back to a normal state.

The lengthy depression, however, put a crimp in the trade which will take some time to remedy. A general feeling of an excellent future, though, is now noted among the dealers, and things are probably not in very bad shape.

C. H. Rose, of the Garden City Sand Company, stated: "Business is 'rotten' in the city. I have not seen a time when so much valuable property was lying idle or when so much money was tied up in buildings which cannot go ahead. A leading architectural firm has plans for buildings totalling \$17,500,000, and there is more than twice this value of work in contemplation. The country trade is fine and we are working day and night sending out sand, gravel and stone-kote."

"The plumbers and steamfitters' strike is causing much tiresome delay and the settlement of the brick strike does not mean operations will start right away. There are few signs of improvement."

R. O. Duffy, of the Richardson Sand Company, stated: "The city demand is very good just at present. Last month was one of the best we ever had and this month promises to be as good. Since the settlement of the strike the trade seems to be much more active and prospects for the future are very bright. Sand and gravel is used in large quantities in caissons of the large buildings, and work of this kind is plentiful."

P. M. Lewis, of the American Sand & Gravel Company, stated: "Trade has improved during the past two weeks. Work on the buildings in the 'Loop,' for most of which we will furnish sand and gravel, will probably go ahead in record time soon. The long period of strikes cut down our business considerably, but now we are looking for a good strong demand which will bring this year's average up to normal at least. The other strikes, of course, will have to be settled before the buildings can be erected above a certain point, but I believe the plumbers and steamfitters will soon be back at work and business will be in a settled condition once more."

A representative of the Atwood-Davis Sand Company stated: "Business is fair in Chicago and is becoming better this month as building operations are beginning to forge ahead. Much sand and gravel is being used in the outlying sections of Chicago as well as in the 'Loop,' and conditions are much better than they were a month ago. Collections are fair. Prices are about the same as they were last month."

The Lake Shore Sand & Gravel Company reported a fair volume of trade this month. Their representative stated: "We find prevailing conditions to be fairly satisfactory. Of course the brick strike was a great demoralizing feature in all lines of trade and now that it is settled we should have some good business. Prices have not changed in the last thirty days. Collections are rather slow just at present, but show signs of improving in a short time."

John N. Bos is having a good trade in sand and gravel at the present time, a particular brand of sand which his firm handles being in great demand. A representative of John N. Bos stated: "Conditions in the sand and gravel business are good, and promise of an increased demand is given. Operations will be started on many buildings soon as the brick strike has been agreeably settled and large quantities of sand and gravel will be used before fall. Many proposed buildings are in evidence at the present time. Prices remain about the same as last month. Collections are fair."

The J. C. Buckbee Company report they have under construction a large gravel plant at Rockdale, Ill., for the Joliet Sand & Gravel Company, the plans for which have been completed and equipment purchased. The plant is being built under the general direction of the company's chief engineer, J. J. Bassett.

The same engineers report the completion and starting during the past month of a gravel washing plant for the Battjes Fuel & Building Material Company, Grand Rapids, Mich., this plant having been built under the direction of the company's engineer, W. W. Patnoe.

THE ANNUAL GOOD ROADS CONGRESS.
(Continued from Page 3.)

is therefore a pleasure to announce that at a recent meeting of our board of directors Mr. Rountree was elected secretary of the Fourth International Good Roads Congress, to be held in Chicago from September 18 to October 1.

The opportunities for this National Congress are very great. The good roads movement is developing rapidly everywhere, and the years of promotion work so vigorously carried on by our association are bearing fruit and thinking people everywhere are demanding relief from the intolerable condition of bad roads.

I bespeak for our deliberations, in view of the recent decisions of the supreme court, a reasonable conservatism and kindly good fellowship, but let us be aggressively active in doing what should be done; let us fearlessly denounce such unadulterated villainies as the convict lease system, and call upon the state and nation to use its convicts in that most humane and practical work—road building. Let us, by the unanimity and insistence of our demands, make an impression upon Congress and the country and thereby give an added impetus to the great movement we have so much at heart—good roads.

After delivering the above address Mr. Jackson announced that Martin Dodge, ex-director of the U. S. Postoffice Roads, had not yet arrived and therefore directed Hon. E. J. Watson, Commissioner of Agriculture of South Carolina, to respond to the addresses of welcome on behalf of the members of Congress.

In his speech Mr. Watson discussed road building from the time of Napoleon, whom he called the first great road builder, to the present day. He showed the great waste caused by bad roads and declared that good roads would save the cotton farmers of the South alone over \$4,600,000 per year.

According to Mr. Watson, "the Federal government is throwing away millions on battleships and other such rot as that."

In concluding he said that he wished to impress his hearers with the importance of good roads, and urged the people of the country to rise up and demand of Congress that proper aid be given in order to accomplish the aims of the Good Roads Association.

Secretary Rountree, after the completion of Mr. Watson's address, read the "Official Call of the Fourth National Good Roads Congress," immediately after which a motion to adjourn was passed, the remainder of the morning's programme being transferred to the afternoon session.

SECOND SESSION FORENOON, MAY 24.

The second session of the congress was called to order by President Jackson at 2:30 p. m., with a larger and more enthusiastic crowd present than at the morning assembly.

President Jackson, after a few well-chosen words, then introduced Vice-President T. C. Powell, of the Southern Railway, who made an able speech on "The Railroads to Good Roads."

"Good roads," he said, "is not a debatable question. All admit the good results of good roads. The main purpose of roads is to furnish means for transporting farm products to the market. It is not possible to too strongly emphasize the importance of the right kind of road building, because a mistake in construction is very costly."

Mr. Powell advocated the split drag in improving roads whenever the same is practicable.

"The logical way to build roads is to issue bonds," he continued, "and build permanently while building. I favor the bond issue for several reasons. The bond issue will enable us to raise more money and it will be spread out over a number of years—and the taxpayer will not be overburdened. On the other hand, if the money is raised by taxation, the amount available from year to year will be relatively small, and therefore not so much mileage can be improved."

"A public highway is in a sense like a roadbed of a railroad and should receive proper care and attention at all times. Therefore I believe that a community should not put off the consideration of a maintenance fund which is a necessity in connection with road improvement and road building."

The address of Mr. Powell was followed by that of Hon. H. E. Blakeslee, Commissioner of Agriculture of Mississippi, who said in part:

"What we may lack in numbers at this convention we make up in enthusiasm. Under such conditions as it has been necessary for us to labor I think we have achieved remarkable success. The majority of our counties are thoroughly awake on the road building proposition and are exerting themselves each to outdo the other. There are now only eighteen counties in Mississippi who have not joined in the movement, and right here I wish to say that, strange as it may sound, that the very people who would profit most by good roads are the ones who kick hardest against the innovation."

After talking along general lines, Mr. Blakeslee

stated that the aid of the press was most essential, and ended by paying a high tribute to the Farmers' Union of Mississippi.

At the conclusion of the above address President Jackson called Governor O'Neal to the chair, who presided over the remainder of the meeting. Governor O'Neal then introduced Hon. E. J. Watson, of South Carolina, who, although heard at the morning session, was requested to speak again in the afternoon on account of his remarkable oratorical powers.

Mr. Watson in his speech spoke first of conditions in South Carolina, a state which he declared had no regular system of road development. The roads, he said, were built and maintained by means of a good roads tax, a local tax and a commutation tax. He declared himself in favor of a highway engineer under the direction of the office of public roads at Washington. Again he appealed with much fervor for Federal aid and asked the people to demand of Congress that they "do something." He declared that if the nation would invest more of its money in roads and less for military and naval improvements we would have a more prosperous country. In an eloquent peroration he pledged that South Carolina would join hands with the other states in demanding of Congress that more be appropriated for good roads. As he took his seat Mr. Watson received a tremendous ovation.

Governor O'Neal reiterated the sentiments of Mr. Watson, and announced that the young ladies of the Birmingham Seminary would entertain the congress with a chorus. After the singing of a beautiful song, the governor thanked the ladies and declared that any movement in which the fair sex was interested was sure of success. The young ladies, fully equal to the occasion, arose and sang "Alabama."

The next speaker on the programme was the Hon. M. V. Richards, land and industrial agent of the Southern Railway, who delivered the following address:

THE EFFECTS OF GOOD ROADS ON IMMIGRATION.
By M. V. RICHARDS, SOUTHERN RAILWAY.

The topic assigned me, "Effects of Good Roads on Immigration," while bearing directly upon the main proposition that good roads are followed by certain results, has its limitations. Substantially, it implies a single plain proposition—"Is immigration into a given section influenced by the presence of good roads, and, if so, how?" The answer can be given instantly, in one word—yes. The balance of the proposition can be treated concisely, and needs no long-extended speech, no discursive arguments.

Any opinions I may advance in dealing with this question are based, not at all upon abstract theories, but upon observations extending through a long period of years devoted to the study of material conditions in the South mainly and, incidentally, in nearly every portion of the United States. One of the most important duties of the land and industrial department of the Southern Railway is to watch local conditions and study local features in every part of its territory. If a district or town is not progressing we seek the cause, and undertake a remedy. If a section is poor in public improvements it is at a disadvantage, since it fails to attract strangers.

Benefits Derived.

Good roads more than anything else transform the rural district. They add the most pleasing feature to the landscape. They induce the building of good farm houses along the highways, well furnished and supplied with modern conveniences and the comforts of home. Fine horses and vehicles follow.

Good roads, therefore, bring good stock, and with good horses and a good road communication between distant neighbors is easy; intercourse between communities is established; social enjoyment is complete.

Good roads greatly increase school attendance; therefore better school buildings and more of them are demanded and built along the safe and inviting highway.

Good roads enable the rural population to regularly attend the country, village or city churches. More and better churches are built in the rural district along the good road, and these churches cement the community, elevate it and add immensely to the social conditions.

Good roads, more than anything else, in rural districts, increase land values. They increase the demand for real estate. They make investments in land secure. They justify and encourage rural development. They draw families from the nearby congested cities or towns, and such people build handsome homes, adding to the attractions of the neighborhood.

Good roads shorten the distance, computed by time, between the farm and the railway, can be traversed at all times and in all seasons by heavy teams with full loads, facilitating the movement of crops to an incalculable extent and minimizing the cost of hauling market products. The cost of living in the market town is reduced in proportion, and this becomes a factor in securing additions to its population.

Carry More Freight.

Good roads carry more freight than bad roads to the railroad, increasing its revenue and thereby enabling it to give better facilities to that section. With good railway service towns expand and industries multiply, with a corresponding increase in the demand for outside labor.

Now, my personal experience with the desirable classes of immigrants, during the many years of my service in promoting the settlement of such people is, invariably, that the new location must offer advantages sufficient to justify them in the breaking up of their homes, and the expense of moving into a strange region and there building anew. Not only are soils and climate demanded, but good railroad facilities, good markets, and good communication with neighboring sections and with a trading town. And they want still more than that: good schools and churches and convenient access to them. The right

classes have been accustomed to them, and will seek only such locations as have them. Those who would select a region where conditions are stagnant because there is no civic pride and no disposition toward progress are few. Such districts are avoided by the very people they most need. On the other hand, the enterprising and progressive element searches out these localities where conditions are better than in his old environment. He may not even have contemplated a change of location, but learns from some source that a certain section in another part of the country has, in addition to natural advantages, enterprising people, efficient railway service, public improvements, a beautiful countryside, good turnpikes, delightful homes where contentment reigns, fine road stock, good schools and convenient churches. He is a prospective settler; and when he drives over the course, the scene decides him. The good road has brought a good citizen—and it will keep him.

In closing permit me—as a friend of the South and a well-wisher toward all its people—to advise every taxpayer to support, to the fullest extent, any movement that will bring about an improvement of the public highways; to bear in mind that every dollar they expend, every effort they make in behalf of good roads in their respective sections is an investment and not a donation; that the returns will be immediate and ample; that good roads built by the fathers are rich inheritances transmitted to their children, and monuments to their wise forethought and their generous consideration of posterity.

Governor O'Neal next introduced State Senator V. B. Atkins, of Dallas county. Senator Atkins made a brief but forceful speech, in which he praised the Birmingham district for its progressiveness. He was followed by the last speaker of the day, H. L. Bailey, of Monticello, Fla., who introduced a resolution asking the legislature of Florida to abolish the convict lease system. The resolution was adopted unanimously.

The session adjourned at 5:15 and the delegates were conveyed in street cars about town and given demonstrations of processes of street paving.

THIRD SESSION—AFTERNOON, MAY 24.

The third assembly of the congress was rapped to order by President Jackson promptly at 10 o'clock Wednesday morning, with a large number of delegates present.

President Jackson called upon Dr. Eaves to offer an invocation and afterwards to address the meeting. Dr. Eaves in an eloquent manner showed that the building of good roads was a spiritual as well as a physical thing, for it enabled the children of the rural districts to have the same advantage that urban children have.

Dr. S. W. McCallie, state geologist of Georgia, was next introduced and spoke on the interesting topic of "Convicts on Roads in Georgia," an address full of valuable information. In substance the employment of convicts on public roads is an unqualified success and solves the convict labor problem.

Jessie Taylor, appointed by Governor Harmon to represent Ohio, made a speech into which he injected much humor and a great amount of "horse sense." "Public sentiment is law in our country, and the only way to build roads is by public sentiment. We people in Ohio have been talking and praying for good roads for years. In Germany it costs 8½ cents per mile to haul products over the road, while in the United States it costs 23½ cents per ton per mile." In closing Mr. Taylor paid a high tribute to Senator Bankhead, of Alabama, whom he characterized as the leader for the Federal aid of good roads.

Judge Hyde Pratt, state geologist of North Carolina, next addressed the congress and made a most interesting talk on "State Supervision of Public Roads."

At this juncture the following resolution was introduced and passed without a dissenting vote:

WHEREAS, The American people are in need of better highways, demanding cheapest transportation over the country roads, that the mail shall be delivered to the people in rural districts as is being done in the cities by the United States;

WHEREAS, Many states have enacted laws to create highway commissions to better country roads; that better highways shall be given to the people; be it

Resolved, That the National Good Roads Congress request the United States senators and congressmen that a national highway bureau be created to give to the American people information and build a system of mail postal roads of high grade.

Following this speech telegrams of regret were read from Governors Wilson, of Kentucky, and Crothers, of Maryland, and Congressmen Blackman and Richardson, of Alabama.

President Jackson then presented J. C. Clair, industrial commissioner of the Illinois Central railroad. Mr. Clair declared that his presence indicated not so much a desire to deliver a speech as a desire to show that his road was in hearty accord with the objects of the congress. He said that this country, although the foremost in building railroads, was behind all others in the construction of highways. Assuring the people of the hearty co-operation of all the railways, he urged all present to "get together" and fight for the cause until victory is achieved.

Lieutenant Governor Seed, of Alabama, who fol-

ROCK PRODUCTS

lowed Mr. Clair, spoke on the topic of "The importance of Good Roads." Mr. Seed spoke in part as follows:

LIEUT. GOV. SEED'S ADDRESS.

Gentlemen, largely an unnecessary and an invisible tax, and yet the most exorbitant and the most oppressive, is the mud tax.

Following an expenditure of more than \$600,000 for construction, and three per cent annually for maintenance, France leads the world in a system of good roads, and here lies the secret to the acquisition of much of her colossal wealth.

Her splendid roadways are a lasting monument, dedicated jointly to national and local control.

The value of farm lands in Ohio averages \$58 per acre; Indiana about \$55; New Jersey, \$65.

In 1905 farm lands in Alabama averaged \$11.75 per acre; in Georgia \$23.50; in Mississippi \$15.95.

The value of a good road in a monetary sense is difficult to measure in dollars and cents, but in general it may be said to consist in:

First—A reduction in the cost of hauling.

Second—An increase in the value of lands within its zone of influence.

Third—Increase in productive area through the making of uncultivated land accessible.

Fourth—The substitution of the more profitable crops for the less profitable crops.

Fifth—The ability of the producer to market his product at a time when prices are most favorable, instead of marketing the product when the roads permit.

With a world-wide demand for king cotton ever increasing, and an area for its production ever stationary, there must inevitably follow a range of values ever upward.

The next speaker, the Hon. Logan Waller Page, director of the United States Office of Public Roads, delivered one of the most impressive addresses of the congress, entitled "Progress of Road Improvements in the South." Mr. Page said in part:

PROGRESS OF ROAD IMPROVEMENT IN THE SOUTH.

By LOGAN WALLER PAGE

In 1904 the office of public roads conducted an investigation to determine the status of road improvement in the United States. The information revealed the fact that there were in this country 2,151,570 miles of public highways, of which 7.14 per cent were improved, while there were in the sixteen states of the South 655,151 miles, of which only 27,185, or 3.87 per cent were improved. It was also shown that the total road expenditures for the United States during the year 1904 was about \$80,000,000, or \$37 per mile, while in the sixteen southern states it was only about \$21,600,000, or \$31 per mile. From these facts it is apparent that the South was less active in the improvement of its roads than any other section of our country.

The fact that so little had been accomplished in the way of road improvement may be charged largely to the system of administration in vogue at that time.

Work of Reform.

In some counties the work of reform has gone to the extent of adopting a partial system of patrol. This is undoubtedly a great step forward, as the patrol system is recognized as one of the best for maintaining highways. France has the most excellent system of highways of any other country in the world, and they are maintained through the patrol system.

The states of Delaware, Georgia, Maryland, North Carolina, Virginia, Louisiana and Alabama have enacted laws whereby the states participate in highway work. Some of these states, however, have not carried their reforms sufficiently far.

North Carolina makes no appropriation from the state treasury for aid in construction work, but appropriates \$5,000 each year to be expended under the state geologist.

Georgia has increased its mileage of improved roads during this period from 2.85 to 7.26 per cent. This has been done largely through the working of convicts upon its roads.

Virginia works its state and county prisoners on its roads, and in addition makes an appropriation of \$250,000 each year for apportionment among the various counties.

Maryland has also established a state roads commission for the purpose of giving advice and assistance and of supervising the construction of all state aid and trunk line roads for which the state makes appropriations.

During 1910 the Louisiana legislature passed an act creating a state highway commission, and providing for the appointment of a state highway engineer, and appropriating money to aid the parishes (counties) in the improvement of their roads. This law also provides for the use of state prisoners in road building. For this purpose, a tax of one-fourth of a mill on each dollar of taxable property in the state is levied.

The legislature of Alabama at its recent session enacted a law creating a state highway commission, providing for the appointment of a state highway engineer, and applying \$154,000 annually from the net proceeds of the convict labor fund to the state highway fund.

Late Reforms.

These reforms have all been brought about since 1904, and, as an evidence of their wisdom and efficiency, during the short period elapsing up to 1909, inclusive, 25,000 additional miles of road were improved, making a total of improved mileage at that time of 42,280, or 6.67 per cent of all the roads in the South.

Another potent result of these reforms, and one which gives promise of greater progress in the future, is the interest and enthusiasm which has been aroused in the subject of road improvement in the South. That this enthusiasm is of a substantial character is evidenced by the fact that more funds have been raised by taxation and bond issues for expenditure during 1911 than ever before.

It is further shown that the South is keeping pace with other sections of the country in the matter of road improvement by the fact that practically one-third of all funds available for expenditure on roads during 1911 are available in the sixteen southern states, while in 1904 the other states of the Union expended practically four times as much as was expended in the South.

Conditions in the South require road improvement more urgently than in any other section of the country, for

the reason that the roads are subject to more continuous and heavy traffic during the winter months, and as they are nearly always wet at this season they cut up very badly and become almost impassable.

To offset this disadvantage, however, the roads of the South can be improved more cheaply than those of the North. In the South labor is cheaper, and convict labor can be utilized and the road building season is longer.

To illustrate how much more cheaply the South can improve its roads than other sections of the country, sand-clay roads are built in Georgia at an average cost of \$387 per mile, and the average cost of sand-clay for five states from which the information is available is \$572. Gravel roads are built as cheaply as \$790 in Alabama, and the average cost of gravel roads for eight states from which the information is available is \$1,725. The cost of macadam roads in the South ranges from \$1,500 per mile in Louisiana, to \$7,660 in Maryland, and the average for nine states, including Maryland, is \$3,826. As a contrast to this, in Ohio where it requires an unusually high standard of road to withstand the traffic and the climatic conditions, they have built many miles of brick roads, and recently at Ravenna a contract was let for the construction of five and one-half miles, 14 feet wide, to cost \$77,000, or an average of \$14,000 per mile.

South's Prosperity.

The South is today enjoying an era of prosperity and expansion. Improvements are in progress along all lines. Its population is increasing each year; its railroad mileage is being extended; its manufactures enlarged; and its agriculture is each year opening up to new possibilities and bringing new areas under its domain. In order, however, for this growth to continue it will be necessary that the roads of the South be improved, for bad roads will checkmate its increasing population, impede its railroad development, hamper the enlargement of its manufactures and restrict its agriculture.

The farming interests of the South stand in greatest need of improved highways, and for this reason the South can better afford to improve its roads than it can to not improve them.

The average cost of hauling corn in the United States is about 7 cents per hundred pounds, but the average cost in North Carolina is 12 cents per hundred pounds. In eleven of the southern states the average cost of hauling corn is 15 cents per hundred pounds, or more than double what the average is for the United States.

The cotton crop, however, is strictly a southern states crop and practically all of it is hauled from farms to ginney or to the shipping point. Therefore, we can safely calculate on this entire crop. The average cost of hauling cotton is about 15 cents per hundred pounds, or 80 cents per bale, the average distance is 11 miles, the average time consumed for each load one day, and the average load 1,702 pounds, or a little more than three bales. The cotton crop of 1910 was 11,969,757 bales, most all of which is hauled first from farm to ginney and then from ginney back to farm, and from farm to market. Computing the cost of hauling this crop at 80 cents per bale, the total cost would reach the sum of about \$9,500,000. If the main roads were improved the average load of cotton could be more than doubled without increasing the horse power, which would reduce the cost by half. If this were done the annual saving on the cotton crop alone would be at least \$4,800,000.

Cotton Seed.

For every bale of cotton produced there is about 1,000 pounds of cotton seed, which has to be hauled with the cotton from farm to ginney and back to farm, and then a large percentage of it is hauled from farm to shipping point for shipment to the oil mills. The average haul for cotton seed is about 10 miles, the average load 1,654 pounds, and the average cost 15 cents per hundred pounds, or \$3 per ton. For every bale of cotton produced there is practically one-half ton of cotton seed, which would make about 6,000,000 tons from the 1910 cotton crop. Computing this on the basis of \$3 per ton for hauling, the total cost of hauling this crop of cotton seed was about \$18,000,000. If only one-third of the cost of hauling the cotton seed could be saved the saving would be about \$6,000,000, which, added to the saving on the cotton, would make a total saving of about \$11,000,000.

In 1900 the total assessed value of taxable property in the sixteen southern states was \$5,465,069,547, or 17.4 per cent of the total for the United States. In 1910 this had almost doubled, the taxable valuation being \$10,346,212,579, which is 18.5 per cent of the total in the United States. Not only has the assessed valuation of the South increased in greater proportion than that of the rest of the country, but the rate of taxation per thousand dollars is generally lower than in the other sections of the country. From every standpoint, therefore, the South is in excellent condition financially for improving its roads and no better investment of its funds can be made than for this purpose.

C. C. Gilbert, secretary of the Memphis to Bristol Highway Association, delighted the delegates by his explanation of how Tennesseans will construct a road from Memphis to Bristol, Tenn., a distance of 542 miles, in two days. This wonderful work, according to Mr. Gilbert, will be accomplished by means of the co-operation of the people along the route, every person doing his share of the work.

After the above addresses of the men, the Hon. John Craft introduced Mrs. A. V. Lane, who read a very interesting paper upon the highway extending from Nashville to New Orleans, proposed by the Daughters of the American Revolution in commemoration of Andrew Jackson's march and to be known as the "Jackson Memorial Highway." After the reading of the paper, Mrs. Lane presented the following resolutions, which were unanimously adopted:

We, the committee from the United Daughters of the Confederacy of Alabama, wish to bring greetings and express our appreciation of the invitation to enjoy the deliberations of your great congress.

We wish to add our endorsement to the great highway from Chicago to Mobile, from New York to Atlanta, and to express our pleasure that the beautiful and historic Shenandoah valley, teeming as it does with the enduring fame of our soldiers, shall be the familiar touring ground of pleasure seekers and commercial travelers.

We commend the Lincoln-Jackson highway to Nash-

ville and express the hope that the grand Jackson highway from Nashville through Alabama on to New Orleans may become a soon reality. In view of which we join the other patriotic organizations in petitioning the Congress of the United States to send out proper equipment for furthering this end.

We, the Daughters of the Confederacy, believe we but do our duty when we ask this honorable body that when naming the great highways of our reunited country they forget not the heroes of our southland, the manner of whose death was the crowning glory of their lives. For there are deeds that should not pass away and names that must not wither.

MRS. CHAPPELL CORY, Chairman.

These resolutions were followed by those of the Daughters of the War of 1812, which were of similar tenor and were also adopted.

After several speeches by other ladies of the two organizations, a motion was made to adjourn and was carried by the house.

During the Wednesday morning session a large number of delegates met at the Morris Hotel and launched a plan for the construction of a highway running from Birmingham to Montgomery.

After the adjournment of the session the delegates were conducted in street cars to Corey, the "Model City of the South." After making a complete tour of the city the delegates returned to Birmingham in time to catch the special train which took them to Oxmoor, where they were treated to an exciting mountain climb given under the auspices of the Birmingham Motor Club and the "Birmingham News."

FOURTH SESSION—FORENOON, MAY 25.

The fourth session of the congress was called to order by President Jackson Thursday morning at 10 o'clock. Rev. Dickinson, of the First Baptist Church, offered the invocation, and afterwards addressed the convention.

Following Dr. Dickinson, T. G. Hudson, commissioner of agriculture of Georgia, was introduced. Mr. Hudson declared that good roads were more effective in building up a country than anything else, and that every cent invested in them repaid the people of the country tenfold. He said that he favored the working of convicts on the roads, as it is in the long run not only more humane but more profitable.

"The government," continued the commissioner, "has spent, in my opinion, many millions of dollars which have never done anybody any good. If we could get the government to take a common-sense view of things and spend money where it would really help, then we might think and talk more of federal aid in good roads improvement."

Thomas L. Cannon, of St. Louis, followed with a short but very forceful speech on the topic "Permanent Good Roads; Ways and Means to Build Them."

"Gentlemen," he said in a part of his speech, "I favor a position in the cabinet of the United States for the construction of roads. I favor also the working of convicts on the roads, and the Federal troops, paid by taxation upon you, acting as guards for those convicts."

"You may think these things are but a dream; that I am but a dreamer, but this republic of ours was also a dream once, but the dreamers saw it come true."

Senator John H. Bankhead, of Alabama, stirred the audience by his earnest speech on "Federal Control of Roads."

"Some people," he stated, "may say my place is in Washington, where Congress is in session. But there are other questions even more important than anything now being considered in Washington. I consider this question of national aid of good roads one of that kind."

"I never heard but one objection to national aid, and that was that there is not sufficient warrant in the constitution to justify such aid. As a matter of fact, the United States has been called upon year after year for all sorts of improvements of those roads which are not national highways."

"The constitution provides for Congress appropriating money for establishing postoffices and post roads. Congress can also appropriate for military roads, and when we relieve the impression that there is no warrant for the appropriation for good road building we will have made a great stride forward and nearer to our goal."

"Don't you think," he asked, "that it is just as constitutional to build roads at home as in newly acquired territory?"

"Before we can get what we want we must have co-operation on the part of the national with the state and county governments. Agitation is a good thing, and you will probably get what you want if you agitate persistently."

"March on Washington, pitch your camp under the dome of the capitol, train your heavy guns on Congress, and lay siege, nor relinquish the battle until victory shall be yours."

At the conclusion of his address Senator Bank-

head asked those who favored Federal aid and those who would fight for Federal co-operation to rise, and the audience stood to a man.

The Hon. Martin Dodge, ex-director of the office of public roads, was next presented, but declined to speak on account of the lateness of the hour, or rather, if the truth be told, on account of a hunger for barbecue, but promised to deliver his speech in the afternoon.

An adjournment was taken and the delegates were conveyed to East Lake to enjoy a big barbecue.

FIFTH SESSION—AFTERNOON, MAY 25.

After arriving at East Lake the delegates marched to a grove on the northern side of the lake and proceeded to feast. To have seen that hungry crowd devouring its food would have made old John D. feel elated, and no one could blame them, for the gastronomical attraction of the day was an old-time southern barbecue. However, the good roads enthusiasts, wishing to combine mind and matter, not only feasted but also held a session in the dance pavilion.

Senator Bankhead presided over the meeting in a most jovial manner, and after the election of a committee on resolutions he introduced Senator Martin Dodge.

Senator Dodge made a very interesting talk on the advancement of the good roads movement throughout the country. "One of the greatest calamities to befall any land is for the farm land to decrease in value. Good roads everywhere they are built increase the value of farm lands quicker than any other factor."

"The prejudice which once existed to the movement is rapidly disappearing, and conditions indicate that we soon will win a great victory over what little opposition there remains."

Arthur Hooker, secretary of the National Irrigation Congress, spoke next, and declared that the people behind the irrigation movement were also ardent advocates of good roads.

The congress adjourned after Mr. Hooker's speech and the delegates proceeded to "take in" the various amusements of East Lake Park.

SIXTH SESSION—NIGHT, MAY 25.

At the Thursday night session, despite a morning and afternoon meeting, a good sized audience was in attendance.

One of the best speeches of the entire congress was delivered by H. B. Warner, of Lexington, N. C., on the subject of the "Press and Good Roads," in which he showed the influential part played in the movement by the newspapers and magazines. Mr. Warner said in part:

PRESS AND GOOD ROADS.

By H. B. WARNER, LEXINGTON, N. C.

The South and the nation at large have made wonderful progress in the building of good roads during the last decade, and I believe that more than 90 per cent of it has been brought about by the unselfish, patriotic work of the editors of the country. Today it is almost impossible to pick up a newspaper anywhere in the country that is not standing squarely behind the good roads movement. All of them are in line and there is not a discordant note to be heard anywhere. Dailies, weeklies, semi-weeklies, trade papers, denominational organs, magazines of all classes, partisan political journals—all are united on the good roads question, and with but few exceptions have given the movement their hearty support. The great awakening and the tremendous enthusiasm evident in all parts of the country may be traced directly to the newspapers of the country and you may readily see that the subject I have been asked to discuss, "The Press and Good Roads," is one of considerable magnitude.

My experience with newspapers and with newspaper men extends over a period of almost twenty years. During that length of time I have had the honor of serving eight years as commissioner of labor and printing in my state, and have been president of my state press association and of the National Editorial Association. I have, therefore, been brought in close touch with the newspaper men of my state and of the nation, and I want to say without the slightest hesitancy that a more patriotic, self-sacrificing, devoted set of men cannot be found on earth. They stand almost as a unit for all that is best in our civic life and no movement that makes for the growth of the community and the moral uplift of the people is allowed to lag for the want of their support. The newspapers of the country have made possible great organizations like this that bring together the good roads experts of the nation, and the newspapers of the country will devote column after column to spreading abroad the good things accomplished here, enlarging the association's sphere of influence a thousandfold.

Birmingham's Newspapers.

Here in Birmingham we have three great newspapers—The News, The Age-Herald and the Ledger, all intensely interested in road improvement and all of them active in the cause. These great dailies have played no small part in securing for Jefferson county its magnificent system of roads and their influence has been felt all over the great state of Alabama. This state stands fourth among the states of the South in the building of good roads, and this proud position has not been at-

tained except by the most strenuous effort. In placing Alabama among the leaders, the newspapers of the state have borne the brunt of the fight and none has done more valiant service than The News, The Age-Herald and The Ledger and Montgomery Advertiser.

Out in Iowa there is a newspaper known as the Des Moines Capital and its editor is Colonel "Lafe" Young. He is a veteran newspaper man and he has been fighting for good roads and for everything else good for many long years. Through his efforts a survey of the state was made and the mileage of roads in the state ascertained. Experts were called on to figure out what a system of good roads for Iowa would cost and the total was enough to stagger the imagination. He saw at first glance that it would be many long years before Iowa could have a system of roads of the highest type of construction, and he began to urge the people to make the best of their dirt roads. At first he was laughed at. Gradually he warmed up to the subject and he enlisted in the building of the magnificent dragged dirt road from the Mississippi to the Missouri, clear across the state, and all of this was done in one day, 350 miles of good roads built in one day! Many thousands of farmers along the line came together one day armed with shovels, picks and road drags and in a few hours the road was built, thus setting an example for the whole world and marking up a new record in road-building. The road has been well maintained and is today the delight of the automobile and a source of pride to every citizen of Iowa.

In scores of communities the plan has been tried on smaller scales, and right now the states of Tennessee and North Carolina are preparing to build just such highways. Five years ago the man that would have ventured to suggest the building of a highway across an entire state in one day would have been laughed to scorn or set down as a hopeless lunatic. Today, in the light of the achievement of this Iowa editor the undertaking is looked upon with high favor and nothing seems impossible of accomplishment.

A few years ago the Atlanta Journal and the New York Herald conceived the idea of building an automobile highway from New York to Atlanta. This gigantic undertaking met with no little ridicule. Paying no attention to those who laughed and those who scoffed and sneered openly, these two great papers went ahead calmly with the work of laying off the route, and before the work of the scouts had been half accomplished the South had been aroused to a pitch of interest and enthusiasm hitherto unheard of in all of the annals of road building. State vied with state, county with county, and community with community in road improvement, and thousands of miles of good roads have replaced bad roads because of the agitation started by these papers. It is practically certain that the next decade will see a good hard road all the way from New York to Atlanta, and from Atlanta on down to Jacksonville, Fla.

In North Carolina the press has led in the fight for good roads. Today North Carolina ranks second to Georgia in road improvement, with the imperial state of Texas third. The newspapers of the state from the highest down to the humblest, have been diligent in season and out of season in furthering the interests of the good roads cause and they have brought things to pass. To the widespread interest aroused by the newspapers of the state I attribute the unprecedented growth and development of my publication, Southern Good Roads, which found instant favor in all parts of the state and the South from the very first issue.

From Tennessee to Sea.

The Central Highway Association was organized last January, the idea originating in the minds of newspaper men, and a charter secured for it from the legislature. The charter provides for the building of the great central highway from the Tennessee line to the Atlantic ocean, traversing nineteen counties, and 450 miles in length. By the bill a trustee for each county is named, and on April 20 the trustees met in Raleigh and organized. I had the honor of being made president of the Central Highway Association and chairman of the strong central committee. This committee has already done a great deal of work. It has decided to make the central highway a 30-foot road from the mountains to the sea, with a 40-foot right of way. There will be nothing shoddy about this road. Throughout its entire length it will be surfaced with sand and clay, gravel or macadam, and it will be a good road 365 days in the year.

But the great central highway will not stop here. Over in Tennessee Governor Hooper, the youthful chief executive of the Volunteer State, is backing a movement to build a great highway across the state from the Mississippi river to the North Carolina line.

On July 5 good roads week will begin in North Carolina. Every man living within five miles of the central highway on either side will be asked to donate his services and the use of his teams and implements to the work of actual construction. The highway will be laid out in sections and supervisors will be appointed in every county to take charge of the work. Every newspaper along the entire line is working for an army of 100,000 men and 10,000 teams for July 5, and it is highly probable that the good roads army will be even larger. Properly directed, this vast army will build the road in one day, but to make its completion sure an entire week will be devoted to it. It will be built exactly as the engineers direct. The United States office of public roads has arranged to detail three of its best engineers for service in laying off the route and no half-way work, no patching and no skimping of the job will be allowed. The road will be built exactly as these engineers direct.

A. G. Batchelder, of New York, chairman of the executive committee of the American Automobile Association, followed with a talk on "Automobiles and Good Roads."

Mr. Batchelder stated that automobile owners were among the most ardent good road advocates, for when a man spends several thousand dollars for a car he wishes to have good roads on which to use it. He declared that the automobile association is attempting to get the auto laws of New York into use as a working basis. These laws allow a certain percent of the registration fee to go towards the maintenance of good roads, but he declared that the auto should not be taxed alone, as it was only fair that other vehicles should contribute their share.

Prof. G. N. Mitcham, of Auburn, made a speech on "Education and Good Roads," which showed the intimate relations existing between each.

SEVENTH SESSION—FORENOON, MAY 26.

The last session of the National Good Roads Congress proved to be one of the most lively and interesting of all the sessions. At this meeting the congress requested all states not having highway bureaus to establish them at once. It condemned the convict lease system. It called a convention of all good road organizations to be held in December at Washington.

The meeting was called to order by President Jackson, and prayer was offered by Rev. J. S. Glasgow.

Congressman Burnett was the first speaker of the day, and discussed "National Aid for Good Roads."

Mr. Burnett gave a history of road building from the days of Julius Caesar to the present time. He showed how the prosperity of a country depended on its roads. He drew out on the needs of today in connection with roads, and illustrated his points with interesting stories.

"I believe the time has come to hold your conventions in Washington," said Mr. Burnett in conclusion. "Meet me next year under the dome of the capitol. We need the people back of us in order that the representatives from the larger cities may see that the people are for the movement."

President Jackson next introduced W. S. Keller, state highway engineer of Alabama, who spoke of the methods employed in that state.

Next, Mr. Rountree read the secretary's report, which showed that 1,364 delegates had registered, that the meetings were honored by the presence of one governor, one United States senator, three congressmen, five commissioners of agriculture, two commissioners of immigration, three state geologists, forty probate judges, twelve mayors, twelve road engineers and three street experts.

Senator W. S. West, chairman of the committee on resolutions, followed with the committee's report, which was adopted unanimously.

President Jackson then introduced Congressman Richmond Pearson Hobson, who spoke on "National Highways." He began his talk by congratulating Birmingham upon the honor of entertaining such a worthy crowd of men.

During his speech he read to the convention the bill introduced by him in the house of representatives. The bill is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the director of the office of public roads of the United States Department of Agriculture is hereby authorized and directed, under the general supervision of the Secretary of Agriculture, to make a general highway survey of the United States.

Sec. 2. That the said director of the office of public roads is hereby authorized to cooperate with road officials of state and localities to make detailed highway surveys; provided, that in such cases the state or locality in question shall bear one-half of the expense.

Sec. 3. That there is hereby appropriated, out of any moneys in the treasury of the United States not otherwise appropriated, the sum of \$500,000, of which \$100,000 shall be available annually for the purpose of carrying out of the provisions of this act.

He declared that he believed that the Federal government should be the center of all road improvement movements, but yet have the states and counties do the majority of the work.

Mr. Hobson stated that the strictest defenders of the Constitution could find nothing wrong with the bill, and that it was the one way out of difficulties when the building of roads will be turned over to the government.

At the end of his speech he recommended that the executive committee of the convention approve his bill and take the matter up with Congress. The making of this recommendation by Congressman Hobson produced the one untoward incident of the congress by precipitating a debate in which Jene Whitson, a delegate from Tennessee, charged that the organization was run by and for the interest of a few men. For a time a hot discussion followed, which was finally ended by a speech by Thomas L. Cannon, who explained the workings of the organization for the benefit of those unacquainted with the facts. At last, on motion of V. B. Atkins, a committee composed of representatives of each state was appointed to consider the bill.

After Captain Hobson's bill had been disposed of, J. H. Rich delivered an address on "Good Roads and the Rural Carriers."

Following Mr. Rich's speech, Miss Alma Rittenbury was given the floor and she announced the committees on the Jackson Grand Memorial Highway.

After several speeches expressing the appreciation of the delegates for Birmingham's hospitality, and the reports of several committees, the session adjourned, and the fourth annual Good Roads Congress passed into history.

PITTSBURGH QUARRY NEWS.

Pittsburgh, Pa., June 16.—Considerable business is being done in crushed stone for county road operations. This total will be largely increased as the year draws on owing to the big contracts to be awarded this fall under the new state appropriation. Concerns which have a fine deposit of stone are getting ready for this business by putting in new machinery, etc., and there is every indication that a profitable season is ahead of them a little later.

The Stone Products Company has been formed with a capital of \$25,000 at Sandy Lake, Pa., by S. S. Ludlum, P. S. Bailey and A. G. Hooveler and others of that place and will mine and quarry stone on an extensive scale.

A. G. Morris & Son are busy at their plant in Butler county, Pennsylvania, and are furnishing a splendid lot of their limestone for road work in western Pennsylvania. Recent improvements have greatly added to their capacity there.

The Nelson-Meredith Company, of Chambersburg, Pa., has installed a new stone crusher plant, which is now running every day. They have a regular tram road and cars and large storage bins.

The Franklin Stone Company has been organized by Edward E. Sturgess, F. E. Beers, R. H. Grambs, James G. Sanderson and Jesse Dimick, of Scranton, Pa., to quarry stone on a large scale. This plant will ship as much as any concern in that part of the state.

QUARRIES IN ILLINOIS.

Springfield, Ill., June 21.—Michael Handler has leased the property of the Garden City Sand Company at Aurora and will install rock crushing machinery, opening up a new industry.

Contract for paving Mulberry street at Mt. Carmel was awarded to Hoffman & Townsend for \$41,122. The firm is now paving Ninth street in that city in addition to having the contract for building nine miles of rock road out of Mt. Carmel.

Britt & Layden will pave Fourth avenue at Moline for \$61,575.

Two miles of macadam paving are planned on Maple avenue at Freeport.

Church street, a mile and half long, in Gibson City, probably will be paved with macadam.

The J. S. Allen Company, of Peoria, was awarded the contract to pave North Orange street in that city with brick for \$7,110.

John Lenox & Son, of Dixon, who have the contract for the Sterling and Dixon road, have installed a new rock crusher in the Dan Schuck quarry in Palmyra township.

The contract for the crushed stone road near Sheldon was let to Lewis Kenoyer, of Kentland, for \$11,111.

The House Good Roads Bill, which provided that the income from automobiles be expended for good roads, was signed by Governor Deneen.

WEST COAST QUARRIES.

San Francisco, Cal., June 12.—The past month has brought quite a revival in quarry operations all along the coast. There is not much doing in the way of new installations, as the large amount of equipment installed in the past year enables the present quarries to supply the market without difficulty, but the demand is keeping most of the plants well occupied. Harbor improvement work is being rushed in Oakland and at many points up the coast, and by the end of summer it is expected that considerable new work will come out on the San Francisco waterfront. At the same time, counties all over California are going ahead with road improvements, and paving operations in Oregon are unusually active.

Deliveries of rock on the Columbia river jetty are being made at the rate of 4,000 tons daily. The jetty has reached a length of 6½ miles and will be completed early next year.

The Southern Pacific Railroad has let a contract for paving Seventh street, Oakland, to the Oakland Paving Company. The work will cost about \$300,000 and includes 2½ miles of standard asphalt work. The paving is being done under the terms of a new franchise, under which the Southern Pacific will run its suburban lines by electric power.

Work is being rushed on the railroad from Auburn, Cal., on the line of the Southern Pacific, and Cool, where the Mountain Quarries Company has installed one of the largest lime quarry plants in the state.

The crushing plant of the Warren Construction Company at Baker City, Ore., was destroyed by fire May 19.

The France Stone Company, Bellevue, Ohio, has been awarded the contract to furnish about two-thirds of the crushed stone to be used in Lucas county for pikes this year. The county will expend about \$50,000.

J. C. BUCKBEE COMPANY BUSY.

The J. C. Buckbee Company of Chicago, who have designed and built many of the larger modern rock crushing plants of recent years, advise that they have under construction at the present time a plant of 2,000 yards daily capacity for Stewart & Hewittson, Port Arthur, Ontario, the plans for which have been completed, the machinery purchased and the erection work is now proceeding under the direction of their engineer, W. C. Page. It is expected the plant will be in operation about July 1.

The same engineers also report plans in progress for a 4,000-yard rock crushing plant for the Grand Trunk Railway System, Montreal, Howard G. Kelley, chief engineer.

The Eureka Trap Rock Company has been incorporated at Branford, Mass., with a capital stock of \$250,000. The incorporators were John Donaldson and David Hofer, of Richmond Hill, N. Y., and A. H. Taylor, of Branford.

The Indiana Road Machine Company has brought suit against the Town of Lake, Milwaukee county, to recover \$2,850 for machinery sold to the old town board in 1907. Included in the equipment was a rock crusher valued at \$1,600.

The Mayer-Bez Stone Company has been incorporated at East Orange, N. J., with a capital stock of \$25,000. The incorporators were Paul Bez, Elizabeth Mayer and Michael C. Mayer. The company will engage as contractors and builders, and will deal in builders' supplies.

The Wisconsin Stone Company, of Milwaukee, Wis., has been awarded a contract by the city of Milwaukee for furnishing 16,500 cubic yards of crushed stone for the west side at \$1.23 a yard and 9,000 cubic yards to the south side at \$1.25 a yard. R. H. Gunz has been awarded the contract for furnishing stone for the east side at \$1.23 a cubic yard and screenings at \$1.20 a yard.

A MODERN CRUSHING PLANT ARRANGEMENT.

The arrangement of stone crushing plants has undergone many changes during the last few years, but no change made recently has had the attention and interest that the plant arrangement has, as shown on this page. This arrangement has been introduced by Raymond W. Dull & Company, of Aurora, Ill., and stone crushing people who have gone into the matter are of the opinion that this method of handling and sizing stone will doubtless revolutionize present methods.

This company has applied for extensive patents on the system and machines, and are preparing to introduce the system in various localities. The following description gives an outline of the system.

The crusher house has several different arrangements depending upon local conditions, but usually consists of a large crusher with preliminary screen, which returns rejections or oversize to secondary crushers, which reduce the stone to proper size and return it to the main elevator again. This arrangement is not new, but the system, from this point, is a radical departure from the usual arrangement.

The material is delivered from a preliminary screen to the main belt conveyor, which is located either over bins, on a trestle, or in a gallery over storage piles.

The conveyor has a combination tripper and screen over each bin or storage pile, which takes out one or more sizes of material and returns the remaining aggregate to the belt which carries it to the second tripper, over the second compartment, where one or more sizes are separated from the whole, and the remainder returned to the belt and so on, until as many sizes as desired are obtained. The trippers with the screens are arranged to travel along a track which enables operators to build a long pile of each material.

The advantages of the system are many. The most important is that one main conveyor carries all the different sizes, while other arrangements require a separate conveyor for each size of stone, as the separation is made at one screening point. Another advantage is that by moving the tripper along the direction of the belt, the storage pile can be made as long as desired.

Spouts are usually arranged to deliver direct to cars, which run parallel to storage piles, thus saving the handling of material twice. If bins are used, the material can be drawn from bins direct to cars.

The first cost of the plant is much less, because only one conveyor is used, instead of three or four, over the storage bins. The upkeep and repairs are less, and the power required is less. The trippers

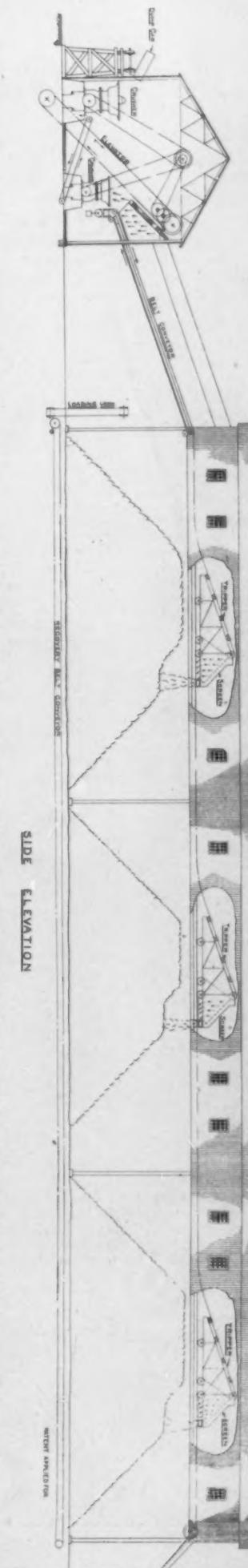
are usually fitted with gravity screens, which have been giving remarkable results. These screens do not require any power to operate and give results equal to screens of revolving or shaking types. Improvements over these types of screens have been made by Raymond W. Dull & Company, to suit the special conditions and needs of their system, and the tremendous power and upkeep expense of revolving screens is eliminated.

The recovery of stone from the storage piles is accomplished by belt conveyors in tunnels under the piles, or by steam shovels and locomotive cranes, or by both belt conveyor, shovels and cranes.

Expensive bins are unnecessary, and money invested in this part of the plant can be applied to other departments of the plant. The usual storage capacity of stone crushing plants is very limited, and when there is a shortage of cars it is necessary to close down the plant.

The steel belt conveyor idlers furnished by this company are a great improvement over the cast iron idlers for they cannot be broken.

Practically all of the prominent sand and gravel plants in the vicinity of Chicago are being equipped with these belt conveyor idlers, as also are stone and ore handling plants throughout the country.





RAPID DEVELOPMENT.

Of the Ornamental Plastering Business and the Modeling of Statuary Due to the Use of New and Better Materials.

Plaster of Paris has been the material used for years in ornamental plaster work. Friezes on walls and center pieces in ceilings, in relief, have been fashioned by hand or molded, to heighten and beautify the decorations of rooms, halls, theatres and corridors of imposing buildings, and plaster of Paris has invariably been the material of which these decorations have been made. Reproductions of classic statues and statuary from marble, bronze and stone in plaster of Paris has been a field of industry in which Italians have been prominent by reason of a natural inborn talent transplanted from Sunny Italy. But plaster of Paris is now little used in these reproductions; it is a material belonging to the past. Alabaster, cement and a composition lighter than cement but as firm in texture and hard as stone, have been substituted.

The peripatetic Italian street vender, with his curious large wooden platform carried on his head, is a thing of the past. So is the cheap plaster of Paris statuary which he carried through the streets on this platform. Shops have sprung up employing many hands, producing statuary of a higher grade, which are sold to the big store in the large cities. On the counters of these stores these artistic wares are displayed and find a ready sale.

The Florentine Alabaster Co., of Chicago, is one of the largest of these concerns in the country. It has had a peculiarly successful career. The moving spirit of this concern is Miss Louise Hirtzel, a pupil of Charles Mulligan, the American sculptor, who brought it into existence some seven years ago. Her dream was to fill the wants apparent everywhere for reproductions of classic statuary which lay between marble and plaster. That dream has been realized. "When I first started this business," said Miss Hirtzel, "I had to import every bit of alabaster from Florence, Italy. Alabaster produces a prettier and a more durable product than plaster of Paris, but it was far more expensive. But since the discovery of alabaster mines in Nova Scotia some five years ago, it has reduced the cost of statuary we make greatly. I require large quantities of it yearly and now I am not obliged to import one pound from Florence.

"Besides statuary we produce large quantities of ornamental garden furniture and lately have received orders for ornamental work in the way of friezes and center pieces in relief used for interior decoration of halls, corridors, etc., in great buildings. Formerly all these reproductions were made of plaster of Paris. The materials we now gen-

erally use for our fine work is alabaster, Keene's Best cement for indoors and Vulcanite Portland cement for outdoors. Further, we use extensively a composition which is lighter than cement, stronger than stone and beautiful in appearance. As, for instance, in the little classic statuary, 'Dante Brooding Over the Death of Beatrice,' we reproduce anything that is wanted, molding different pieces in various sizes from 7 to 72 inches.

"Only a few weeks ago we received an order from a large Denver firm for 6,000 pieces, which are given away with sales. The leading stores in the large cities of this country have our statuary on their counters, which have a large sale. We employ 25 Italians in our modeling department and in our decorating department employ many Germans, who decorate the statuary in appropriate delicate shades before they are placed on the market. We ship our statuary practically to every country on the globe, and have received a request from a prominent London (England) firm to give it the agency for our statuary there."

Thomas A. Rawson, who for a number of years was the manager of one of the departments in Marshall Field's store, has lately become the manager of the Florentine Alabaster Co. Its field is expanding rapidly in the reproduction of classic statuary, works of modern sculptors, oriental subjects and novelties.

CLEANING BAGS.

The New Jersey Adamant Manufacturing Company of East Newark, N. J., has perfected an arrangement for cleaning bags. In the case of the above company only bags containing plaster are reckoned, but their system is applicable to Portland cement bags or others.

It is a much mooted question, that of cleaning bags, and one which should be carefully considered by all users of these articles. The following information furnished by the New Jersey Adamant Manufacturing Company relative to their "system" should be of benefit in obtaining a solution of the question. A representative of the company writes:

"For the benefit of the industry generally, on the subject of bag cleaning, we are glad to furnish the following information. We have built a machine and find it most satisfactory. It has called forth favorable comment on the part of others in a similar line of business, to whom we have lent a helping hand in overcoming the difficulties of dusty bags, and several concerns on the strength of this information have their own bag cleaner now in use and are pleased beyond measure.

The machine is built in this fashion: the cage is hexagon in form, 8' in diameter and 8' long. It makes 18 revolutions per minute; spokes and cross bars are of 3x4 white oak and covered in with 1½" mesh ¼" wire cloth. This size machine receives a charge of about 150 bags and cleans same in about five minutes' time, extracting from each bag about one pound of material. We feel convinced that with these principal features given, a machine can easily be built. We are glad to give this information and feel sure that through its publicity in your columns the trade generally will be benefited by the perusal of this article upon this subject."

C. C. Morehouse has taken the plaster and imitation stone contract on the Oakland city hall at \$40,750.

Bids will be opened June 24 for plastering and scagliola work in the new wing of the court house at Portland, Ore.

The Detroit Plaster Company has been incorporated with \$1,000.00 capital to manufacture plaster products and building supplies, with office in Detroit, Mich. James Bole, of Lansing, Mich., holds the chief interest in the company and James Leenhouts is also interested.

The Aeuma Cement Company, of St. Louis, Mo., has purchased 3,000 acres of land near Huntington, Ore., on which is a fine deposit of gypsum rock. The company will erect a \$100,000 plant, daily capacity 200 tons. The gypsum obtained in trial tests was found to be very pure.

OPENS CHICAGO OFFICES.

Permanent offices have been opened in Chicago in the Ashland block, rooms 1215 and 1216, by the Plymouth Gypsum Company, of Fort Dodge, Iowa. They are in charge of A. J. Armstrong, its Illinois representative, and F. E. Fletcher, its Chicago representative. This step became necessary because of the ever increasing demand for the Plymouth brands of plaster, gypsum partition tile, plaster board and metal studding products which are manufactured and sold by this company. The opening of these offices will enable the company to more expeditiously and conveniently take care of its many customers in Chicago and vicinity. The gentlemen in charge of the Chicago offices will welcome all visitors at their new headquarters.

BUSINESS DULL IN BROOKLYN.

Brooklyn, N. Y., June 16.—Peter Fraser, of Brooklyn, N. Y., prominent in the plastering trade, speaking in reference to the conditions in Brooklyn stated:

"The conditions in the plastering line in Brooklyn are very slow indeed. The only jobs now in operation that are worthy of mention are three apartment houses that are being built on Brooklyn Heights, and of which I am doing the plastering for two. Outside of these jobs there is very little doing in the building line except in the suburbs, where a slight activity is noted. The prospects for the summer are very poor, and at the present time we are unable to give our employees steady employment and I never saw such a large number of plasterers idle."

"The Plasterers' Association of Brooklyn, of which I was president, was disbanded some time ago."

The Webster City Brick and Tile Company, at Webster City, Iowa, has provided a library, rest and recreation room for its employees. In this room will be found newspapers and the latest magazines as well as a library of books. A large machine shop for repairing its own machinery is also a feature of the plant.



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"ALCA" LIME

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Gives the long sought, reasonably-quick-hardening lime mortar necessary in modern building construction. For interior and exterior work. Makes every mortar (excepting white coat) needed in a building. Preserves metal lath or iron work. Will not be damaged by water. Permanence, strength and plasticity.

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Lightest in Color
Highest Tensile Strength

ALWAYS UNIFORM

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from blast furnaces, of proper analysis, and pure calcite limestone are the ideal raw materials for the manufacture of Portland Cement of uniform high quality. In America Universal Portland cement only is made from granulated blast furnace slag and limestone burned together at a high temperature to a hard clinker in rotary kilns.

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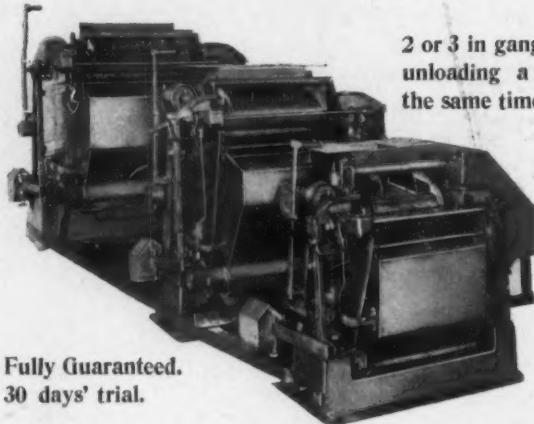
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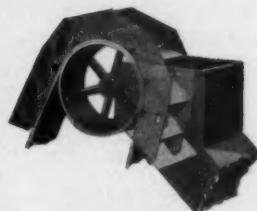
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The "S-A" Side Lapping Bucket Elevator

has greater life and capacity than any other elevator. The buckets overlap one another in such a way that a continuous steel trough is formed on the rise of the elevator and around the head pulley. This prevents material from wearing the belt or from falling back of the bucket and puncturing the belt.



"S-A" Malleable Elevator Buckets
are made in all styles and capacities to suit the working conditions of the elevator. They are made of the best quality of malleable iron and are proof against grit and abrasiveness.

The Best Engineering Practice

recommends the use of "S-A" Machinery for the handling and screening of your material.

The largest quarries and stone crushing plants of the country, the great majority of the gravel washing and screening plants and a large number of the most prominent cement mills, use "S-A" Conveyors and Screens exclusively. These successful companies purchase machinery for their plants that throughout a period of years will give the greatest service at the lowest ultimate cost.

For economy of operation and for the greatest reliability specify "S-A" Equipment.

The services of our engineering department are at your disposal. We are glad to submit suggestions and advice or to design the complete equipment for any conveying or screening outfit.

Put your problem up to us.



36-Inch "S-A" Belt Conveyor
under load. These carriers are adjustable to 48 inches wide to allow for increase in the plant's capacity.



The Largest Conveyor Ever Built
72-inch "S-A" Jumbo Pan Conveyor
handling 1000 tons per hour.



"S-A" Revolving Screen No. 9
A most serviceable screen for crushing plants. Heavy end bearings and removable wearing plates and rings. Diameters 42, 48 and 60 inches of any length.

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Cement Question

Dealers, contractors, and engineers in the Middle West are studying the cement question from new angles. The wisest ones are going behind the "Standard Specifications," having found that Superior, for example, far out-tests them, chiefly in fineness and in low magnesia. These two essentials of a true Portland cement are coming into greater prominence every day, and are being given due weight in the choice of a cement for work that must endure. The logic of experience strongly favors the dust-fine, low-magnesia product. Such is Superior. Use it—always. Ask for our free "Superior Catechism" No. 7.

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Unexcelled for Facing Concrete Blocks
Ornamental Concrete Stone
White Plaster
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Cars or in 175-lb. Bags.**

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LARGEST SHIPPERS OF WHITE SAND IN THE UNITED STATES

WAINWRIGHT GALVANIZED STEEL CORNER BAR

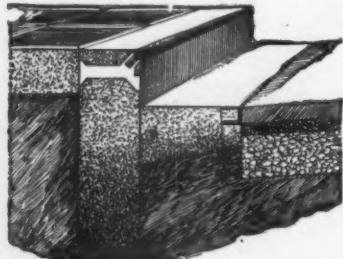
FOR PROTECTING EDGES OF CONCRETE CURBS, STEPS, COLUMNS, ETC.

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November 22, 1898
May 5, 1903
March 26, 1907
August 29, 1907
August 2, 1910

This bar is SELF ANCHORING, the DOVETAILED WEB holding it firmly in place EVERY INCH OF ITS LENGTH, requiring no clips, bolts or wires at intervals, allowing buckling or expansion, causing loosening of curved plates or other devices, which form no permanent protection to the Curb. This bar presents a RESISTING DEPTH of nearly AN INCH OF SOLID STEEL, at any possible point of impact, as compared with other devices using seldom more than one-eighth of an inch of resisting surface.

It has a record of ten years' use without failure when laid in accordance with our printed directions, which will be sent to any engineer or contractor who desires them.

This bar has been in public use for more than ten years as the main feature of the



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MECHANICALLY PERFECT AND
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THIS CURB WILL STAND HARDER USE AND LAST TEN TIMES AS LONG AS PLAIN CONCRETE CURBING

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ARCHITECTS are invited to read pages 242 and 243 "Sweet's Index."

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SPUR AND BEVEL GEARING—LONG WEAR AND NO BREAKAGE
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REVOLVING SCREENS

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Water-proofing of Cement Work
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SPECIFICATIONS AND SAMPLES
ON REQUEST

The Maumee Chemical Co.

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TOLEDO, O.



TRADE MARK.

ESTIMATING PLASTER WORK.

A contributor to the Contract Record, of Canada, writes as follows on estimating for plastering:

The line of work in which I am interested is plastering. My experience, from general observation, is that plastering contractors take off the quantities from the plans and submit their estimates for the same in a very careless manner, without regard to any system.

To some extent there is an excuse for this, for when asked to bid on a job the plastering contractor has to go to the architect's office, where a set of plans are spread out on the desk, and, as a general rule, there are several other contractors of different branches trying to get off their work at the same time from the same set. Consequently, he has to hurry through the specifications and get his measurements in a very unsatisfactory way. Of course, the more important trades do not have to put up with this, as they are supplied with plans to take home or to their office, where they can deliberate.

The difficulty could be remedied to a very great extent by the architects sending a set of their plans and specifications to the rooms of the Builders' Exchange, where they would be at the disposal of all the members. But to revert to the plasterer who is figuring on the job in the office.

He has a little memorandum book that must go into the breast pocket of his coat easily. He begins by putting down the proprietor's name, and then follows up with a conglomeration of figures that no one but himself can decipher, and the chances are that if he doesn't get the yards figured out before he goes to sleep he will have to pay another visit to the office to get the tangles out. As for any work out of the ordinary run, he has no room in his book to make proper notes, and consequently a lot of "guesswork" has to be done, and this is one of the principal causes of cheap prices.

It has always been my practice in taking off ceilings to take the largest square on the ground floor and then take any projection or bays. If the upper floors coincide with that one, just multiply by the number that are alike. In attics or half stories I always take the floor surface for the ceiling and take all the walls the full height of the partitions. In measuring walls, I take all the longitudinal walls of same elevation, first, and then the transverse walls. Where the buildings have many breaks and short surfaces of walls, it saves figuring to use a tape line to gather them all into one stretch. For moldings or dados, add the side and end of each room together, also one side of all jambs, and then double the amount for running feet.

Proposed Form for Use in Taking Off Quantities.
Plastering quantities in.....
for Architect.

CEILINGS.

First coat
Second coat
Third coat
On metal
On plaster board
On concrete

WALLS.

Rendering
Second coat brick
First coat lath
Second coat lath
Third coat lath
On metal
Outside work:
Allowance for scaffolding
Allowance for heating
Allowance for repairing
Allowance taking off old work and removing debris
Allowance expenses out-of-town jobs

Linear feet of cove angles
Linear feet of metal angles
Linear feet and girth of beams
Linear feet and girth of moldings
Square feet columns and pilasters
Square feet keen cement finish, plain
Square feet keen cement finish, jointed
Square feet Caen cement finish, jointed
Square feet scagliola and marble imitation

ORNAMENTAL WORK.

Modeling
Staff moldings
Cast ornaments
Arches

DESCRIPTION OF MATERIALS.

Lath
MORTARS
Finishes
No. of yards in ceilings:
First coat
Second coat

Third coat
Metal
Plaster board
Concrete
No. of yards in walls
Amount of tender, \$
Date of figuring

By using a sheet like this when taking off a job, I think that contractor would save time, for with the specifications before him he would simply have to find the different dimensions and enter them in their proper places on the printed form. With proper attention to the specifications and sheets, mistakes would be very few.

After the quantities have been found and the sheets properly filled out, they can be filed away and should be very useful for future reference. My idea would be for the architects to keep the blank forms and supply them to those whom they wish to figure on a job.



The brick plant of C. E. Sikes at Hampton, Ill., was wiped out by fire, causing a loss of \$2,500.

The Eldorado Brick Company, of Eldorado, Ill., has increased its capital stock from \$14,000 to \$50,000.

The Jefferson Brick & Tile Company, of Jefferson, Wis., has installed a new cable system in its plant.

The Zimbel Brick Company, of Sheboygan, Wis., has purchased fourteen acres adjoining its yards and will enlarge its capacity.

The Wisconsin Brick Company, of Madison, Wis., has been incorporated with a capital stock of \$40,000.00 by C. W. Debelin, T. E. Werdenbeck and E. J. Frautschi.

The holdings of the Eldorado Brick Company and the L. F. West Drain Tile Company at Eldorado, Ill., have been bought by William, Ed and Roy Gregg.

The National Drain Tile Company, of Terre Haute, Ind., received the contracts for the McConnell drainage district near Leroy for \$5,452 and the Okaw district near Champaign for \$5,090.

During a recent thunderstorm the dry kiln of Burnham Bros., just outside of Milwaukee, was struck by lightning and burned, causing a loss estimated at \$10,000.00. The machine house and boiler house were saved.

Officials of the Two Rivers Brick Company, of Two Rivers, Wis., have decided to go out of business because of various other interests in which the various officers are associated. The machinery will be sold and the plant torn down.

The Savage Fire Brick Works, of Meyersdale, Pa., who are manufacturers of fire brick, runner brick and pavers having a capacity of 30 million, are going to install two waste heat driers and a soft mud brick machine. They report business as good.

The Franz Woerfel Brick Company, of Manitowoc, Wis., has taken over the plant and yards of the Boettcher Brick & Tile Company of the same city. Henry Boettcher will retire from the business and Adolph Woerfel, son of Franz Woerfel, will have active charge of both plants.

The new plant of the Washburn Brick Company, at Washburn, Wis., has been placed in operation and is in charge of Manager Skjelbred, an experienced brick manufacturer. The company owns a large clay field of exceptional quality. The company contemplates turning out a line of paving bricks.

The plant of the Fond du Lac Pressed Brick Company, of Fond du Lac, Wis., is in busy operation manufacturing brick by a new process. A new wire-cut machine has been installed and brick is being turned out at the rate of 40,000 daily. Improvements to the extent of several thousand dollars have been installed.

MT. SAVAGE FIRE BRICK WORKS EXPANDS.

The annual meeting of the directors of the Union Mining Company, proprietors of the Mount Savage Fire Brick Works, Mount Savage, Md., which have been successfully and continuously operated since 1841, was held in their general offices in the Fidelity Building, Baltimore, Md., on June 6. The president reported that the company is enjoying an excellent demand for its "Mount Savage" and other brands of fire brick, so much so that in order to handle promptly the large volume of orders being received it has become necessary, for the second time in a period of six years, to increase the capacity of their works.

With this end in view, a committee from the company spent practically the entire month of May, investigating the merits of the various modern methods and machinery that could be used in the manufacture of high-grade fire brick and, during the course of their investigations, they visited many of the largest fire brick operations in the East and West.

Plans for the erection of an extensive addition to their already large plant were then submitted to and adopted by the directors. The new extension is now under construction and when completed, the Mount Savage plant will have a capacity of 100,000 nine-inch brick per day. It is not proposed, however, to operate the entire plant on standard brick and shapes exclusively. A large portion of it will be devoted to the department having in charge the manufacture of special and difficult shapes used in the iron, steel and allied trades, the lime and cement industries; water gas linings, gas bench settings, etc.

Before the new construction work was decided upon, the company spent considerable money prospecting and boring with diamond drills its large holdings of clay lands, the result being that it is assured of sufficient of the celebrated "Mount Savage" flint and plastic clays to last for centuries.

The Union Mining Company was among the first of the fire brick manufacturers of the United States to realize the importance and necessity of giving each industry a fire brick made with a view of withstanding its particular and peculiar conditions. To accomplish this, its research department is constantly at work on the question of mixing, grinding and burning its clays and calcined material and it is this close attention to the requirements of their customers that has enabled it to build up such a faithful and loyal following among the users of fire brick generally.

The company maintains offices in Pittsburgh and New York, in addition to those at Baltimore and Mount Savage, Md., and has special representatives in Chicago, Philadelphia, Boston, Indianapolis, Cleveland, Cincinnati and San Francisco. The officers are: H. Crawford Black, president; Van Lear Black, vice president; A. T. Burr, secretary and treasurer; W. L. Hamilton, general superintendent; and Charles H. Claiborne, general sales manager.

PHILADELPHIA CLAY NEWS.

Philadelphia, June 15.—Although the fire brick industries have expanded more slowly than some of their neighbors in trade, attributed to the general uncertain conditions in the financial market, it is admitted that a fair volume of business has been going on.

Cyrus Borgner, of Cyrus Borgner Company, fire brick and clay retorts, 23rd, near Vine street, says although there is business of a spasmodic character all the time, there is undeniably a lack of vitality in trading which it is believed will diminish as the fall advances and the world's investors are enlightened as to the attitude of the corporations in regard to the trust laws.

The Philadelphia Fire Brick Works, Vine, above 23rd street, reports a fair volume of business coming in but admits same is below normal for time of year. Mr. Houck, of this concern, is optimistically hopeful of a less strained activity in the fall.

CUT THE AMOUNT.

Springfield, Ill., June 21.—Senator Dunlap's bill making an appropriation for a new kiln house and the equipment required for the study of and heat treatment of clays, glass and cement products at the University of Illinois was passed by the Illinois Senate, 38 to 0, but the amount asked was cut from \$50,000 to \$21,000.

The Rankin Paving Brick Company has been incorporated at Boulder, Colo., for \$800,000.00. The incorporators are Herman S. Rankin, V. B. Cannon, and Frank A. Cheney. The company's main offices will be in Denver. It will operate in Boulder, Denver and Jefferson county.

Concrete

National Association of Cement Users

Meets Annually.

OFFICERS

Richard L. Humphrey, Philadelphia.....	President
E. D. Boyer, Catasauqua, Pa.....	1st Vice-President
Arthur N. Talbot, Champaign.....	2nd Vice-President
E. S. Larney, Boston, Mass.....	3rd Vice-President
Ira H. Woolson, New York, N. Y.....	4th Vice-President
E. E. Krauss, Philadelphia, Pa.....	Secretary
H. C. Turner, New York.....	Treasurer
P. S. Hudson, Louisville, Ky.—Common Building Blocks and Cement Products.	
H. S. Doyle, Chicago—Exhibition.	
W. H. Ham, Boston, Mass.—Insurance.	
A. E. Lindau, St. Louis, Mo.—Reinforced Concrete Building By-Laws.	
C. W. Boynton, Chicago—Roadway, Sidewalks and Floors.	
L. C. Wason, Boston,—Treatment of Concrete Surfaces.	
R. P. Miller, New York—Fire-proofing.	

J. A. Kuster has erected a cement products plant at Plymouth, Wis., and will turn out cement blocks, balustrades and other ornamental work.

The Newaygo Engineering Company has begun construction work on a new plant in Newaygo. The new plant is being built largely of concrete.

The Northwestern Concrete Company, of Milwaukee, Wis., has been awarded the contract for the erection of a \$14,000.00 addition to the St. Mary's hospital in that city.

The Whirlpool Mixer & Machinery Company has been incorporated at Milwaukee, Wis., with a capital stock of \$25,000.00, by A. R. Aaddatz, Frank E. Dennett and J. H. Hurley.

The Chicago Artificial Stone Company, recently organized by G. D. McConnell and others, of Chicago, has let the contract for a \$60,000 concrete building in Grand Rapids, Mich.

The Board of Public Works, Louisville, Ky., awarded the contract for the building of the concrete arch bridge on Churchill street to the National Concrete Company, of Indianapolis, for \$11,510.

The Economy Concrete Company, of New Haven, Conn., are manufacturers of decorative concrete stone, having a capacity of 50 to 100 cars monthly. They report the outlook in their territory as very favorable.

The Raymond Concrete Pile Company, of New York and Chicago, has been awarded the contract for placing concrete piles in the foundations of the Boyer-Campbell building at Congress and Brush streets, Detroit, Mich.; Albert Kahn, architect.

John Upton, of LaFargeville, N. Y., who is a prominent concrete worker, is going to install a concrete block, tile and brick plant as he finds a demand for this class of construction and material. He is building a concrete house for his own use.

The contract for the concrete pile foundation of the apartment house to be erected for Herman Scherr at Calow avenue and Park Front terrace, Baltimore, has been awarded to the Raymond Concrete Pile Company, of New York and Chicago; H. T. Tinley, architect.

The Raymond Concrete Pile Company, of New York and Chicago, has been awarded the contract for placing the concrete piles for the foundations of a new building to be erected for the American Can Company at Palmer and Beach streets, Philadelphia; N. M. Loney, engineer.

The MacArthur Concrete Pile and Foundation Company, 11 Pine street, New York City, have recently been awarded the contract for the foundations of an eight-story office and factory building for Landers, Frary & Clark, cutlery manufacturers at New Britain, Conn. The foundation includes some 300 or more pedestal concrete piles. Max J. Unkelbach is the architect and engineer for the building.

BUILDING CODE IS OBNOXIOUS.

New York, June 15.—A building code particularly obnoxious to the concrete and cement trades has been introduced by the aldermanic committee on buildings and has received so much unfavorable comment that there is but little likelihood of it being passed. The code particularly favors a hollow tile made by one large concern to the exclusion of concrete work. This is the second attempt made to jam a code of this nature through. Numerous protests have been made by concrete and other business men.

Irving T. Bush, president of the Bush Terminal Company; John Arbuckle, of Arbuckle Brothers; Benjamin W. Morris, of LaFarge & Morris, architects; Albert Oliver; H. C. Turner, president of the Turner Construction Company, and William N. Beach, member of the legislative committee of the Association of American Portland Cement Manufacturers, called upon Mayor Gaynor to protest against the adoption of the proposed new building code on the ground that it discriminates against the use of reinforced concrete and other building materials in favor of hollow tile. They declared that the adoption of the code as it was presented would work ruin to many concerns engaged in the business of manufacturing building materials.

A delegation representing concrete manufacturers also called on the mayor with a proposal that they be allowed to conduct tests of their material. On the committee were Albert Oliver, Edward Escher, H. C. Turner and T. M. Vinton. A copy of the proposal was handed to Alderman Kenneally, chairman of the building committee, and other copies will be sent to those interested in the controversy.

The committee calls attention to the fact that at a public hearing on the code an opportunity was offered to make a test of their material, and they say they are now willing to do so and suggest that the hollow tile interests also make tests. If the latter refuse to do so, the concrete interests say they are willing to pay the cost of a test of hollow tile material, such tests to be started at any time and to be completed within ninety days. The terms, which embrace complete fire, water and load tests for both kinds of materials, are suggested thus:

1. Of a flat cinder concrete form of construction between beams in accordance with the present regulations for testing such constructions now required by the Bureau of Buildings of Manhattan.

2. Of a flat reinforced concrete form of construction designed in accordance with the regulations now in force in the borough of Brooklyn.

3. It being understood that the manufacturers of terra cotta hollow tile are also to make and bear expense of tests of flat terra cotta block forms of construction side by side and at the same time with our tests, according to the specifications for flat hollow block constructions as called for in the proposed code.

All the tests to be on spans of six feet center to center of bearings, and to have no plaster, cement or other protection on the other side.

We propose that these tests be made in strict accordance with the regulations governing tests of fireproof constructions now in force in Manhattan and under the supervision of a committee to consist of superintendents of the Bureau of Buildings for the five boroughs and two members of the Board of Aldermen. This committee to designate a professor of engineering of Columbia University, Stevens Institute, Massachusetts Institute of Technology, Rensselaer Polytechnic Institute or the consulting engineer, Ira H. Woolson, of the National Board of Fire Underwriters, who will be paid by us to conduct the tests.

We further agree to pay a competent mason to build a test arch of flat terra cotta blocks, the builder to buy his blocks in the open market, we to defray all expenses in connection with terra cotta structures, in addition to defraying all expenses in connection with our own structures, to the end that your committee may have authentic and direct information as a basis upon which to draw proper sections covering cinder fireproofing, reinforced concrete and hollow terra cotta block construction to be inserted in the new code.

We are prepared to start these tests at any time and complete them within ninety days after the proposed committee has designated a professor of engineering and the consent or refusal to cooperate in making these tests has been received from the manufacturers of hollow terra cotta blocks.

In view of the fact that the agitation for a new building code has extended over a period of at least five years, we feel the further slight delay we suggest will be insignificant in comparison with the benefits to be derived from a thorough knowl-

edge of this subject by your committee and the general building public.

IMPORTANT BRIDGE CONTRACT LET.

The contract for building the new reinforced concrete bridge at the site of the old Mayo bridge across the St. James river, connecting Richmond with South Richmond, formerly known as Manchester, has been let and awarded to I. J. Smith & Company, of Richmond, Va., on plans drawn up by the Concrete-Steel Engineering Company. Bids were called for not to exceed \$225,000, to be opened on February 1st. On that day it was found there were fifteen bidders and considerably more than one proposal from several of the bidders, with a broad range of prices. The contract was awarded to the above named firm by the committee on streets last May.

This bridge is to be built in accordance with the Melan system and diamond bars, and is to have a concrete railing and a combination trolley and light pole of reinforced concrete. There will be eighteen arches each having a span of 71 feet, with four abutments and sixteen piers. Seven of these arches cross the James river from Richmond to Mayo's Island and eleven from Mayo's Island to South Richmond. The total length of the bridge is to be 1,721 feet, with a roadway of 44 feet and two sidewalks of 8 feet each. Provision is made for water and gas mains and three conduits of six sections each, for power, police and telephone wires. The bridge is designed to carry 50-ton electric cars and will be provided with two tracks.

PITTSBURGH CONCRETE NEWS.

Pittsburgh, Pa., June 16.—Very few large concrete contracts are up for bids in the city. In fact, about the only thing that has been awarded lately of importance was the Point bridge and the widening of the Smithfield street bridge. The raising of the streets in lower Allegheny above flood level will require a large amount of concrete work, but no reinforced concrete construction news of importance is to be had in the city proper. Engineers report the best jobs of this kind coming on to the boards are projects for coal mining companies, and several of these for concerns in eastern Pennsylvania are now being figured. The warehouse building movement which was expected to follow the freeing of the Allegheny river bridges has not started as yet, although it is expected that several of these projects will materialize soon.

Irwin & Witherow have let contract to W. F. Trimble & Sons of the north side for building the railroad shops of the Morgantown & Kingwood Railroad Company at Morgantown, W. Va., to cost \$40,000. This is the largest railroad reinforced concrete job awarded this summer in this district.

John Eichleay Jr., of the south side, has received the contract for the \$100,000 pumping station to be built in that part of the city. It will require a large amount of concrete work.

The city of Niles, Ohio, has let the contract to Ensminger Brothers, of Columbus, Ohio, for its \$75,000 filtration plant. Work will be started at once and a large amount of concrete construction will be included.

Lawrence county, Pennsylvania, is rapidly increasing the number of its concrete bridges. Contracts were recently awarded by commissioners at New Castle, Pa., to J. H. & M. E. Miller, of that city, for two bridges on Atlantic avenue to cost \$4,498.20.

CONCRETE IN ILLINOIS.

Springfield, Ill., June 21.—V. Jobst & Son, of Peoria, have the contract for the five-story concrete and steel cracker factory to be erected in Peoria by Thomas & Clarke at a cost of \$125,000.

The Quincey Gas, Electric and Heating Company, of Quincey, has blue prints for a new \$100,000 power house, to be of reinforced concrete with a twelve-foot stone foundation.

Laws & Grantham, the concrete bridge contractors of Irving, have received many compliments upon the prompt and efficient manner in which they executed recent contracts for structures in Montgomery county.

A concrete bridge costing \$12,000 will be built over Keith creek at Sixth street, Rockford, by three railroads and the city.

CONCRETE TANKS.

Barry, Ill., June 21.—Building concrete tanks is one of the features of the plant of the Barry Concrete Construction Company; W. T. Mitchell, manager. This concern located in a small town last year and used ten carloads of cement in the manufacture of tanks, tile, blocks and drain tile.

THREE SHOWS.

The Cement Products Exhibition Company Yielding to Popular Demand, Finally Decides to Hold a Third Show at Kansas City.

Three cement shows will be held by the Cement Products Exhibition Co., 72 West Adams street, Chicago, during the first three months of 1912. The places and dates are as follows:

New York, Madison Square Garden, January 29 to February 3.

Chicago, Coliseum, February 21 to February 28.

Kansas City, Convention Hall, March 14 to March 21.

The addition of Kansas City show was decided upon after a letter ballot taken among the exhibitors at the previous shows. The letters received from the exhibitors indicated a strong demand for an exhibition in Kansas City in addition to those at New York and Chicago, and the Cement Products Exhibition Co. determined to hold a show west of the Mississippi river in March, 1912.

Kansas City is well located geographically and is a most important field from the standpoint of the maker of cement, cement products and cement machinery. Building operations in Kansas City and surrounding territory have been increasingly active year after year. The territory is so far removed from Chicago that many of those who would like to attend the Chicago show are prevented from doing so on account of the distance. An exhibition in Kansas City should draw heavily from Iowa, Minnesota, Missouri, Kansas and the southwest. Convention Hall, which has been selected for the show, is a large and convenient exhibition building. There is plenty of exhibit space and the conditions are very favorable to holding a cement show.

The three shows next year will be so arranged that exhibitors desiring to be represented at all of them may move from New York westward, taking advantage of special freight cars, which will be arranged by the Exhibition Co.

Preliminary plans for the shows are now underway. A number of changes in the rules and regulations are under contemplation and some changes have already been made. Previous exhibitors will be glad to learn that the management has decided to show upon each large sign furnished the name of the exhibitor and his address, together with a short description of the business. Any additional cardboard signs desired will also be furnished by the management free of charge.

Although requests for space are already being received by the Cement Products Exhibition Co., no applications are considered formally filed until all interested concerns and previous exhibitors are provided with complete information and given ample opportunity to make application for the reservation of exhibition space.

A UNIQUE BLACKSMITH SHOP.

If there were any basis of fact for the old superstition about the good fortune which is supposed to attend the man over whose door a horseshoe is nailed, C. J. Johnston, a blacksmith of Glendine, Montana, ought to be more than usually lucky. Mr. Johnston is an enterprising blacksmith and owns what is undoubtedly the most unique blacksmith shop in America. It is built of cement blocks and the entire doorway is in the form of a huge horseshoe. The front windows are also in the shape of horseshoes. Extending across the top of the front of the building is a long row of anvils, ten altogether, each anvil bearing one letter of Mr. Johnston's name and initials. This unique sign can be seen for a long distance and attracts no little attention. It was put in place after the accompanying photograph was made.

The horseshoe shaped doors and windows are made of reinforced concrete, old wagon tires being used.

Mr. William Hurst, who did the work, describes the method used as follows: "We started by building a platform on the ground which we were very particular to get level and well blocked up, as a very slight give in the form while the concrete is in the green state will cause cracks.

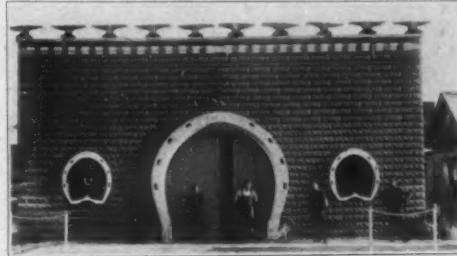
"We then drew the outline of the shoe on the platform, took one-half inch by fourteen-inch white pine boards and soaked them in water until they were thoroughly wet through, bent them into place and then nailed brackets against the outside every eight inches all the way around. We made the inside the same way and filled all the cracks and nail-holes with ordinary plaster stucco to make the moulds smooth inside. The short curves on the small horseshoe forms were made of galvanized iron

bent to shape. The nail holes were made by cutting small blocks of wood the shape of the nail heads and nailing them to the forms; their shape allowed them to be readily removed.

"We placed pebbles screened to about one and one-half inch size over the face of the mould, and put in the concrete on top of them with plenty of reinforcements. The mixture was very rich, about four parts of bank gravel to one of cement.

"By placing an eight foot timber under the forms about three feet from the toe of the shoe, we raised forms, shoes and all at one time. It came up to place so nearly right that we only had to move one side about one-half inch. I would estimate the total weight at about three and one-half tons. We raised this into place just three days after it was cast, with a derrick.

"The blocks are cut and laid up against the horseshoe with a very rich cement and lime mortar. We made all of the small window shoes on the same form, taking the form off and lifting them to place afterwards. The sign is made of concrete anvils cast in moulds made of tin worked to proper



UNIQUE BLACKSMITH SHOP, BUILT OF CONCRETE BLOCKS.

shape while still plastic. The wooden letters were fastened to the anvils by means of a small wooden block that was put into the face of each anvil for that purpose."

The forges in this shop are also most unique. They are made of concrete with coal trough and water on one side. Electric blowers are used. There are cement floors throughout the entire building. The size of this building is fifty by one hundred and ten feet. The walls are eight inches thick made of single air space blocks, made on an Iowa machine. The height of the sidewalls is twelve feet and six inches, and that of the front wall twenty feet.

Every sixteen feet on both sidewalls the builders placed reinforced concrete pilasters six by 16 feet the entire height of the wall, that serves two purposes, by supporting the trusses of the roof and by stiffening the walls. The queen truss is entirely under the roof, and there are seven of them which carry the live shaft for transmitting the power to the machinery from an electric motor. Universal Portland Cement was used throughout this work.

LARGE CONCRETE ELEVATOR.

One of the largest concrete grain elevators in the West has recently been completed at Denver, Col., for the F. C. Ayres Mercantile Company. The elevator was constructed with reinforced concrete. The work was under the supervision of one of the most



F. C. AYRES MERCANTILE COMPANY.

competent concrete engineering firms in the country. A recent failure of a concrete grain elevator, due to carelessness and incompetency on the part of the contractors, has taught a lesson to builders, and the construction work on this building was done with the utmost care and attention to the placing of reinforcing steel rods in their proper positions. Plenty of time was given to the work to allow the concrete to become practically adamant before any extra load of floors was put upon it. The result is shown in the accompanying photograph, a perfect type of concrete grain elevator, built to stand the wear and strain, while there is grain to put in it.

The contractor for the building was the John L. Park Company, of Denver.

The Slater Construction Company, of Pontiac, has purchased 2½ acres near Detroit. The company, which manufactures concrete blocks, will move its plant from Pontiac to the newly acquired property and operate in Detroit. The concern is already moving a portion of its equipment to the site and will begin the erection of a factory immediately. It is said that contracts have been secured for the manufacture of cement blocks for one hundred cellars and because of the scarcity of brick it is anticipated there will be an increased demand for materials of this order.

The C. A. Shaler Co., of Waupun, Wis., will erect a reinforced concrete factory building, to be used for the manufacture of the Shaler Electric Vulcanizers. The building will be two stories high and 30 by 130 feet in dimension.

Plans have been completed by Brust & Philips, architects, for a new department store building to be erected by the Edward Schuster Co., Milwaukee. Reinforced concrete will be used throughout the structure, which will cost approximately \$160,000.

The Red Bay Concrete Manufacturing Company has been incorporated at Red Bay, Ala. The incorporators were E. P. Auger and E. A. Smith.

CONCRETE IS FIREPROOF.

Minneapolis, Minn., June 20.—A recent fire in a wholesale drug house at Minneapolis caused a tremendous heat, as 60,000 pounds of powdered drugs were consumed in a few minutes, and furnished an excellent test of the enduring qualities of the reinforced concrete of which the building was constructed. Any building of ordinary construction would have been a total loss, as the flames filled one floor almost like a flash. An interesting test as to the effect of excessive heat upon reinforced concrete floors was furnished by the refusal of the owner of the building to accept the original estimate of the fire insurance adjusters. The original estimate of loss was made on the theory that the concrete floors and ceilings were not damaged sufficiently to be torn down, but the owner refused to accept these figures, claiming that the concrete had been damaged and weakened by the fire, and insisted upon a test by putting a weight of 400 pounds to the square foot, the original test made by the architect when the building was turned over to the owner. He held that if the floor deflected more than 3/16 of an inch under this test, he would regard it as defective and require its removal. Two of the eight panels involved in the fire were tested with a weight of 250 pounds to the square foot, and one deflected 5/16 of an inch and the other 4/16. As a further test the same weight was applied to another panel in a part of the building not damaged by the fire, the deflection being only 3/32 of an inch. This was taken to show that the reinforcing steel used in its construction undoubtedly expands under great heat, causing what little weakening there may be in the construction.

Many factories and large business houses carry a surplus stock of coal for use in case of emergencies. If soft coal is stored there is danger of spontaneous combustion, and such stocks as are apt to be left undisturbed for a considerable time should be stored in fireproof bins. Many fires which have been reported as "cause unknown" are believed to have been started by spontaneous combustion in coal. The value of reinforced concrete bins for coal storage was forcibly shown recently at Minneapolis, where a fire started in 224 tons of coal stored in the surplus bins of Tibbs, Hutchings & Co., wholesale dealers. The fire burned several days, filling the building with gas. Plumbers sought in vain for a leak in the pipes, but when finally the fireproof door leading to the coal bins was opened the smoke and flames burst out, and it was apparent that the reinforced concrete walls and ceiling had saved the plant from destruction.

ELEVATOR

And Eighteen Storage Tanks Having a Total Capacity of 700,000 Bushels, Built of Reinforced Concrete.

Before giving a general description of the new reinforced concrete plant of the Northwestern Malt & Grain Company at Cragin, Ill., the attention of the reader is called to the type of construction, which is practically an insurance policy in itself. It is true, reinforced concrete construction requires a larger initial outlay of capital, but not a larger outlay, as the difference in initial cost is more than offset by the heavy insurance necessary to fully cover structures of combustible materials, which, furthermore, readily depreciate in value.

The grain interests have been quick to realize this, and also the fireproof advantages of concrete construction, as complete destruction by fire, such as occurred in July, 1910, at this plant, is at all times reasonably possible wherever combustible materials are used. Five hundred thousand bushels of barley were consumed in the flames, adding greatly to the damage, which approximated \$600,000.00, fully covered by insurance.

Illustration one shows the relative merits of the two types of construction—the work of erecting the reinforced concrete workhouse and storage tanks shown was just completed when this disastrous fire occurred, and it was only a matter of a few days until the new plant assumed the duties of the structures destroyed.

Misfortunes such as this have also influenced the builders of grain elevators in favor of concrete construction, and many of whom are now wholly restricting themselves to this type.

The reinforced concrete elevator consists of a workhouse and eighteen storage tanks, which have a total capacity of 700,000 bushels. The workhouse and eight of the tanks, with a capacity of 375,000 bushels, were constructed first, with no contemplation of immediate addition, but, inasmuch as the old wooden plant was reduced to ashes, it was finally decided to add ten additional reinforced concrete storage tanks.

The workhouse, as shown in illustration two, is five bays long and three bays wide, or 42' x 70', and measures 153 feet from the basement floor to the eaves of the roof. From the foundation to the top of the bins is a monolithic reinforced concrete structure ninety-one feet six inches high, resting upon a solid reinforced slab twenty inches in thickness. The remaining portion includes a structure of skeleton steel framework, the walls, floors and roof of which are covered with "Ferroinclave" steel sheeting, which is, in turn, covered on both sides with cement plaster, giving the workhouse an entire concrete construction effect.

This method of cupola construction—structural steel skeleton covered with "Ferroinclave" plastered on both sides—has many decided features. The skeleton frame affords stiffness and strength and at the same time lightness, while all the sheet metal construction is enclosed in concrete, thereby reducing deterioration, and rendering unnecessary the frequent painting exposed sheet metal requires.

The heavier members of the steel skeleton are painted at intervals.

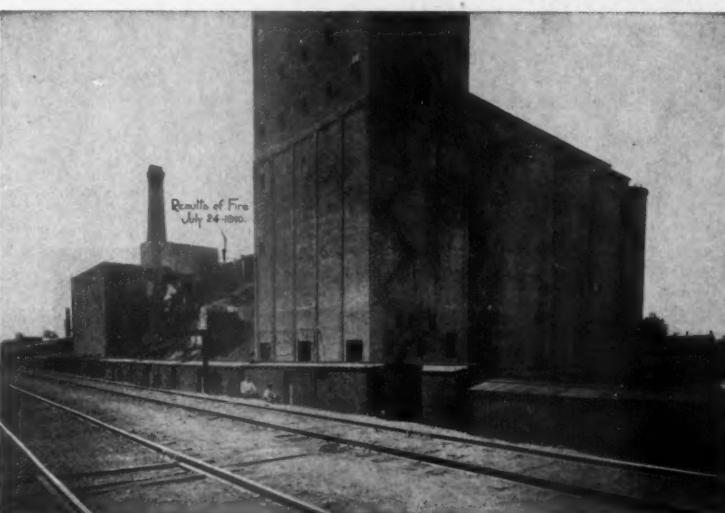
There are five floors in the workhouse, the basement floor at ground's level; the first or working floor; the distributing floor, immediately above the tops of bins; the scale floor, and the machinery or top floor, illustration two. The "Ferroinclave" floors are readily adapted for the changes required from time to time for the installation of any new machinery or the rearrangement of spouts, etc.

There are twenty-one bins within this structure, having an approximate total capacity of 100,000 bushels. Of this number eight are fourteen feet square, center to center of walls, while the remainder are oblong, and all fifty-eight feet deep. The feature of these bins is that their unique design eliminates waste space, which is impossible with circular bins.

The method followed in arriving at the homogeneous construction of these bins is very interesting, inasmuch as square movable forms were very successfully used by the Stephens Engineering Company—the first form of this type, to our knowledge, used in work of this character. With the aid of these forms the walls were carried up simultaneously, progress being made at the rate of three feet per day, the straightness of the pilasters, the smooth surface of the walls, and the otherwise satisfactory condition of the work upon completion, being a strong factor in favor of using forms of this type.

The workhouse is equipped with double-pivoted fireproof wire-glass windows, and rolling steel doors protect the large door openings. A stairway leads from the basement floor to the first or working floor; a spiral stairway from the first floor to the distributing floor; and zigzag stairways from the distributing to the top floor. In addition, a small passenger elevator operates by a motor between the first and machinery floors, and, consistent with the city's requirements, a steel fire escape is erected on the north side of the elevator.

Adjacent to the workhouse and connected thereto by bridges and tunnels, are two sets of circular storage tanks, twenty-five feet in diameter and seventy-six feet high. The first set, consisting of eight tanks, was completed in July, 1910. The work of constructing the other set, consisting of ten tanks, was started September 1, 1910, and completed November 15, exactly eleven weeks later, the consistent delivery of "Chicago AA," which was made in one and two car shipments, assisting in making this progress possible.



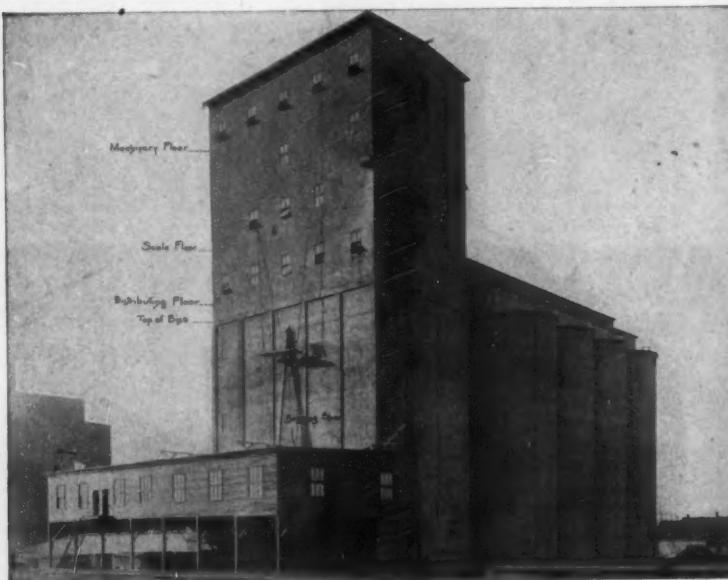
THE NEW REINFORCED CONCRETE PLANT, IMMEDIATELY AFTER THE FIRE, SHOWING THE OLD WOODEN STRUCTURES BURNED DOWN.

The tanks proper are of monolithic reinforced concrete construction, and including the interspaces, have a capacity of approximately 600,000 bushels, while the galleries above the tanks were constructed in a manner similar to the top portion of the workhouse. The bagging shed, as shown in illustration two, spans three tracks, and is about forty-eight feet wide by 100 feet long, one section serving as the plant office. Into this shed the malt is drawn from the side bins and, after bagging, delivered through chutes to the cars below, weights being obtained by means of track scales. This shed, which is light and well ventilated, consists of a skeleton steel frame covered with "Ferroinclave," which will be plastered inside and out, making it an entirely fireproof structure.

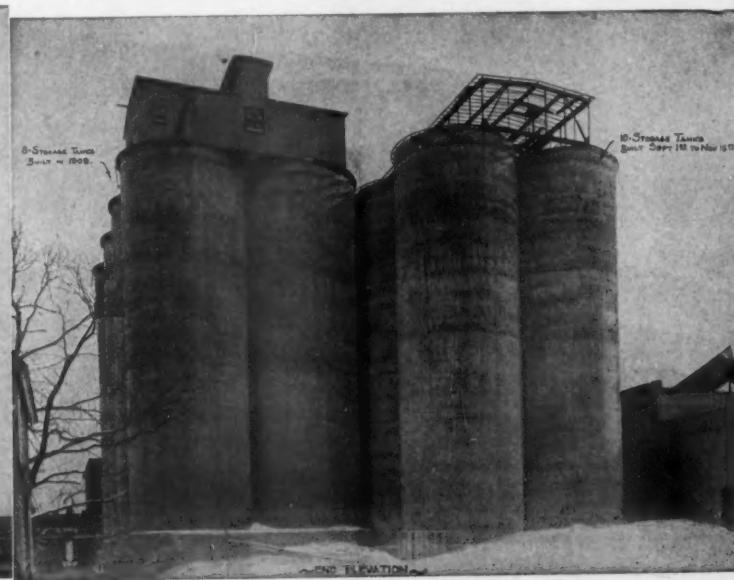
For the benefit of those who may be interested in the method of operating a modern grain elevator we give the following brief description of the equipment at this particular plant:

The workhouse, which is used for the receipt and shipment, weighing, cleaning, transferring and mixing of grain, contains five elevators (three having a capacity of 12,000 bushels per hour and two a capacity of 6,000 bushels per hour), and three 2,000 bushels hopper scales, served by garners of equal capacity. The grain is delivered into the storage tanks from the receiving scales over two thirty-inch belt conveyors, and is removed from same by two other belt conveyors of the same size contained in tunnels under tanks, which connect with the basement of the workhouse. The barley is delivered to the malthouse also over a thirty-inch belt conveyor, and the malt is returned to the elevator on the same conveyor by simply reversing the motor.

The machinery at this plant, including elevators, conveyors and cleaning machinery, is driven by individual motors controlled from a switchboard by



VIEW OF THE REINFORCED CONCRETE PLANT, COMPLETED JULY, 1910, SHOWING BAGGING SHED.



VIEW OF THE REINFORCED CONCRETE STORAGE TANKS, EIGHTEEN IN NUMBER.

ROCK PRODUCTS

double-throw oil switches. The electric power is furnished by an $18\frac{1}{4} \times 30$ medium speed "Buckeye" engine, direct connected to an Allis-Chalmers alternator. The entire plant was designed and constructed by the Stephens Engineering Co., Chicago. Ten thousand barrels "Chicago AA" Portland cement was used.

The Roebling Construction Company has taken the concrete contract for the Oakland, Cal., city hall, amounting to \$104,000.

GOVERNMENT STATISTICS SHOWING CONCRETE WORK DONE DURING YEAR 1910.

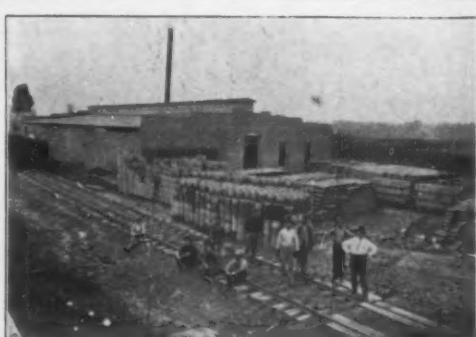
City.	Concrete,		Additions, alterations, and repairs.
	New.	Cost.	
Allentown, Pa.	1	\$65,000	
Altoona, Pa.	2	11,125	
Atlanta, Ga.	2	220,000	
Atlantic City, N. J.	1	9,000	
Binghamton, N. Y.	22	30,044	
Boston, Mass.			1 \$100
Bridgeport, Conn.	14	63,279	
Brooklyn, N. Y.	(a)	(a)	
Buffalo, N. Y.	10	430,200	
Butte, Mont.			(a) (a)
Cambridge, Mass.	5	261,500	
Camden, N. J.	3	301,900	
Canton, Ohio	5	5,950	
Charleston, S. C.	16	8,000	
Chattanooga, Tenn.			
Chelsea, Mass.	5	5,900	
Chicago, Ill.	519	9,894,800	200 \$80,000
Cincinnati, Ohio	10	42,868	
Cleveland, Ohio	140	448,660	
Columbus, Ohio	3	700,000	
Davenport, Iowa			2 \$2,500
Dayton, Ohio	20	436,820	
Jersey, Colo.	39	260,300	10 4,400
Des Moines, Iowa	3	200,000	
Detroit, Mich.	21	1,300,000	11 100,000
Dubuque, Iowa	21	50,000	
Duluth, Minn.			
East St. Louis, Ill.	7	10,778	6 2,400
Elizabeth, N. J.	23	86,000	
Elmira, N. Y.	13	18,605	
Eric, Ind.	2	53,785	
Evensville, Ind.			
Fall River, Mass.			
Fort Wayne, Ind.	23	150,000	
Galveston, Tex.	1	10,000	
Grand Rapids, Mich.	43	89,450	7 7,400
Harrisburg, Pa.	3	59,575	
Hartford, Conn.			
Hoboken, N. J.	2	250,000	
Holyoke, Mass.	5	315,000	
Houston, Tex.			
Indianapolis, Ind.	29	127,710	
Jacksonville, Fla.	8	465,300	
Jersey City, N. J.	8	211,402	1 55,000
Kansas City, Kans.	12	113,370	
Lawrence, Mass.	4	18,300	
Lincoln, Nebr.	7	16,500	(b) 1,350
Los Angeles, Calif.	16	861,050	1 163,000
Louisville, Ky.			
Lowell, Mass.	1	150,000	
Lynn, Mass.	4	28,000	4 77,400
Manchester, N. H.			
Memphis, Tenn.	11	30,700	
Milwaukee, Wis.	69	1,224,847	79 45,308
Minneapolis, Minn.	(a)	(a)	(a) (a)
Montgomery, Ala.			
Nashville, Tenn.	15	84,950	
Newark, N. J.	82	200,600	
New Haven, Conn.	3	\$200,300	
Newton, Mass.	14	83,125	
New York, N. Y.	4	140,000	1 \$1,000
Norfolk, Va.	2	34,000	2 61,500
Oakland, Calif.	10	224,432	
Passaic, N. J.	11	34,100	
Paterson, N. J.	34	254,900	
Peoria, Ill.	9	17,860	
Philadelphia, Pa.	28	2,014,300	73 285,700
Pittsburg, Pa.	24	144,000	4 24,000
Portland, Oreg.	56	1,231,520	3 2,100
Quincy, Ill.	1	10,000	
Reading, Pa.	47	75,000	10 14,000
Rochester, N. Y.	84	133,500	3 2,300
Rockford, Ill.	5	160,000	3 2,000
Sacramento, Calif.	4	240,000	
Saginaw, Mich.	5	10,700	(a) (a) (a)
St. Louis, Mo.	(a)	(a)	(a) (a)
St. Paul, Minn.	73	1,319,901	5 1,714
San Antonio, Tex.	5	333,000	
San Francisco, Calif.	10	241,040	(b) (b)
Schenectady, N. Y.	6	18,400	
Seattle, Wash.	32	2,872,400	540 104,283
Somerville, Mass.	3	100,000	
Syracuse, N. Y.	2	3,000	
Tacoma, Wash.	(e)	(c) (b) (b)	(b) (b)
Terre Haute, Ind.	15	18,325	1 50
Toledo, Ohio.	2	425,647	
Topeka, Kan.	16	505,745	3 9,500
Trenton, N. J.	5	11,000	
Troy, N. Y.	5	85,000	
Washington, D. C.	6	20,200	20 10,000
Wheeling, W. Va.	1	28,000	11 3,529
Wilkesbarre, Pa.	3	16,400	
Wilmington, Del.	9	197,763	
Worcester, Mass.	6	82,700	4 6,000
Yonkers, N. Y.			5 8,000
York, Pa.	1	8,000	
Total.....	1,791	30,624,668	1,010 1,123,594
Per cent of total.....		3.39	.13

THE WISCONSIN MAUSOLEUM CONSTRUCTION COMPANY.

This company was recently incorporated in the State of Wisconsin, consisting of aggressive and able business men well known throughout the state. It will operate under patents secured by The United States Mausoleum Company, of Fremont, O., incorporated under the laws of the State of Ohio, issued to it by the United States Government Patent Office, covering certain methods of mausoleum construction and improved devices for the perfect sanitation of crypts, which positively destroy all odors and germs of disease. As mausoleums have been built for centuries past, it does not claim exclusive right to build mausoleums. Its claims are on sanitary methods of building and operating community and private mausoleums, which have never before been used in the history of the world.

The United States Mausoleum Company has sold the exclusive right to the Wisconsin Mausoleum Construction Company, of Milwaukee, Wis., to erect mausoleums agreeable to these patents issued at Washington, D. C., in the county of Milwaukee and contingent rights in the entire state of Wisconsin.

The officers of the Wisconsin Mausoleum Construction Company are: Geo. L. Thomas, of Milwaukee, president. For thirty years he has conducted one of the most progressive undertakings



ACME TILE & CONCRETE COMPANY, PARAGOULD, ARK.

The Acme Tiling & Concrete Co. has been organized at Paragould, Ark., with \$25,000 capital stock, to manufacture tiling and concrete blocks. A. Bertie is president; H. S. Trice, treasurer; D. D. Hodges is secretary, and D. G. Woody is vice-president and manager.

The Western Concrete Pole & Post Co. has been incorporated at Ogden, Utah, to manufacture posts, poles, sewer pipe and other articles of concrete. Capital stock, \$50,000. Incorporators: George Maitland, W. M. Jefferis, S. F. Halverson, A. L. Corey, Sidney Bamberger and J. B. Bean.

The Witthoefft-Krusz Concrete Forms & Construction Company, of St. Louis, has been incorporated. Capital stock, fully paid, \$100,000.00. Incorporators: Philip Krusz, Otto Schultes, William Grond and others. The company will engage in general building and construction.

Horlick's Malted Milk Company, of Racine, Wis., has commenced the erection of a large reinforced concrete office and warehouse building. The structure will be four stories high, 100' x 100', with a wing measuring 30' x 70' in dimensions. The building will be strictly fireproof, reinforced concrete being used throughout. The exterior will be faced with brick. The structure will cost \$100,000.00.

The American Concrete and Street Railroad Tie Company has opened offices in the Central National Bank Building, Birmingham, Ala. The concern is headed by B. M. Bullard, president, and W. R. Powell, secretary and treasurer. The company will build in the suburbs a \$150,000.00 plant for the making of concrete railroad ties. It will cover about five acres, and the company will employ about five hundred men. The officers state that the company's arrangements with various railroads justify a capacity for their plant of 2,000 ties daily. The product of the new concern is a patented tie, made in two parts and connected by a steel binder. The separation of the tie in the center assures a flexibility not secured by other patented ties, and this difficulty discouraged the manufacture of previous designs, as their rigidity was very destructive to rolling stock. The cost of the new tie will be only a fraction more than that of the wooden ones. Nine ties will be used per rail, while by the old system eighteen are required. J. D. Haggard, one of the directors, will act as general manager.

BIG CONCRETE TILE CONTRACT.

Raymond, Ill., June 21.—One of the biggest concrete tile contracts in Illinois was let when the Raymond Cement Tile Company outgeneraled the vitrified tile men in the Union Drainage District and stepped away with a \$17,818 order. In order to impress the skeptical farmers as to the lasting qualities of the concrete, the makers gave a ten year guarantee. The contract calls for 6,220 feet of 33-inch, 1,140 feet of 30-inch, 2,626 feet of 22-inch, 2,640 feet of 20-inch, 4,120 feet of 18-inch, 5,535 feet of 16-inch, 3,535 feet of 15-inch, 5,085 feet of 14-inch, 7,340 feet of 12-inch, 20,940 feet of 10-inch, 15,975 feet of 8-inch, and 9,180 feet of 6-inch.

The company has added 8,000 feet of floor space to its factory and installed machinery for making 16- to 33-inch tile at an expense of \$3,000.

The Illinois Cement Construction Company, of Springfield, Ill., was awarded the contract to pave School street in Hillsboro for \$24,564. The contract calls for Edwardsville brick, sand cushion, concrete foundation and concrete retaining curb.

The construction of these modern mausoleums will be of specially prepared concrete or artificial stone. The outer building will be independent of the inner structure; not even will the foundation walls be connected in any way. The exterior walls, it is claimed, may be removed or rebuilt at any future time without injury to the interior or catacombs.

Concrete pipe has won a notable victory at San Diego, Cal., being adopted in preference to ordinary vitrified sewer pipe for a large amount of new work to be done in that city.

A CONCRETE BEER REFRIGERATOR

**Concrete Hollow Tile Used Exclusively in the Construction of a Small Cold Storage Station.
Built by the E. Porter Brewing Co., of Joliet, Ill.**

Cold storage stations usually located near the railroad depot have become an indispensable item of equipment in every community under modern commercial organization.

Breweries, meat packers, shippers of dairy products and fruit find the need and recognize the value of the cold storage station with increasing emphasis every summer season.

This is one of the newer developments of civilization quite as important as sanitation and just as essential as the modern bath tub or gas range.

Again the concrete industry scores the highest obtainable efficiency at the lowest cost for cold storage station, even as it has done in so many other important additions to the comfort and safety of the human family. There is a well-recognized rule of practical economics that the perfect solution of every problem is at the same time low in first cost and also cheap to maintain. Possibly this is due to the fact that the real solution is always in line with nature. Anyway, the concrete cold storage station which is the subject of this article is no exception to the rule.

The economy of cold storage depends upon insulation—first, last and all the time. Suitable materials for the construction of insulating walls, roofs and floors have always been scarce and costly, at least the application of unsuitable materials to the purpose of insulation is a very expensive operation. The prohibitive cost of adapting stone, brick and wood in the construction of cold storage stations has prevented the management of railroads generally from supplying their freight departments with adequate cold storage at the points closest to the producers of such supplies as require constant refrigeration.

Refrigeration and the cold storage station are familiar topics with every brewer, every meat, dairy and fruit shipper. There is nothing new to be attained except to work out practically the well-known principle of insulation. This has been done, and the little cold storage station described in detail further on, represents another achievement of the progressive concrete industry, for it is almost exclusively concrete in all its parts.

Plans and specifications, detailed and approved by Sebastian Laager, president of the E. Porter Brewing Company, of Joliet, Ill., with the co-operation of his staff of experienced beer refrigerator men, including Julius Braun, secretary of the company, are responsible for the little refrigerator that marks the beginning of a new era in cold storage construction. It is located alongside of the Chicago & Alton railroad tracks at Lemont, Ill., and is being used by the brewery for storing a carload of beer in kegs and also bottled beer. Scoring it from every possible technical standpoint, it is a complete success, a credit to the skill and experience of its owners, besides it is a money-maker.

The structure measures 16x20 feet on the ground, and is 14 feet high. Footings were laid 4 feet

below grade of concrete 1x2 feet, and thereupon seven courses of concrete hollow tile were laid and filled with slush concrete. This foundation wall extends about 3½ feet above grade, or about the level of railroad car floors. Earth from the excavations was thrown inwards after building an 8-inch wall of concrete hollow tile in the center and parallel to and flush with the 20-foot foundation walls. At grade and in the top course of tiles 1-inch steel rods were embedded in the concrete filling to tie the foundation walls firmly together. The entire foundation was next filled with earth and cinders solidly tamped in place so as to come flush with the foundation wall. A reinforced concrete floor, using 1-inch rods on 2-foot centers and heavy weight triangle mesh wire fabric in the lower half of an 8-inch slab, and the floor slab was graded to drain from all directions into a "trap."

6 inches thick, providing 2 inches above the tiles as the compression member of the T beams of concrete. A shelter roof of ordinary composition carried on wooden frame bolted down to the concrete roof slab and provided with concrete hollow tile ventilators turns the weather. The outside of the tile walls was covered with one coat of cement and lime plaster, this coat being protected at the corners with Parker corner bead and having a 2-inch beveled wash at the floor slab. Two small windows just below the roof slab equipped with three sashes each so as to give two dead air spaces provides sufficient light, and one door opening provided with double doors and curtains completes the insulation.

The concrete used on this job throughout was a 1-2-4 mixture of Universal cement, bank sand, crushed rock, all wet enough to pour smoothly.

The ice rack is placed about the center of the interior, and a wooden loading platform has been built in front of the door to facilitate the handling of kegs to and from the cars.

Taken all around, the refrigerator experts consider this little cold storage station the most perfect example of economical refrigeration obtainable.

Concrete hollow tile for this entire structure was furnished by the Chicago Structural Tile Co. It is the well-known Pauly type of concrete tile, and has been found particularly adaptable for the special purpose of cold storage structures of this kind. It is very dense concrete, made by a process which resembles porcelainware more than anything else. The tiles are remarkable for their extremely low conductivity of heat and cold, and famous for their unique bonding qualities with cement mortar and plastering materials.

In the opinion of those in the best position to know, the insulating efficiency of this little cold storage station could not be duplicated in any other known material for double the money investment involved.

NEW YORK CONCRETE NEWS.

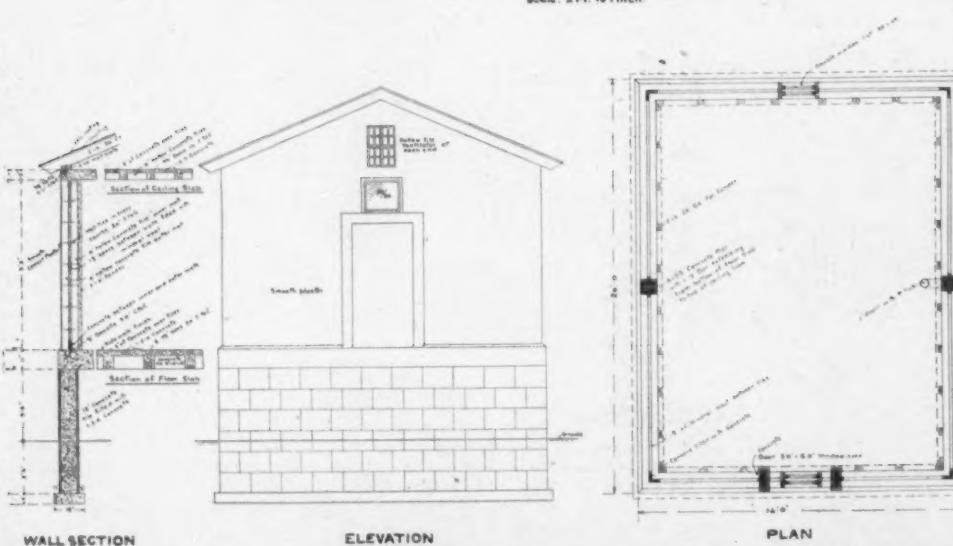
New York, June 16.—Plans have been filed for the erection of five concrete firehouses for the fire department of the city of New York. Three will be built in Manhattan and two in the borough of Queens. The authorities have decided that in the erection of these houses to try reinforced concrete construction, and it is said by the architects that if these houses prove satisfactory this character of construction will be adopted in other boroughs of the city. The following houses will be built in Manhattan: Three-story concrete truck house and dormitory, 45'4"x75', extension 28'x25'5", asbestos roof, to cost \$51,000.00, at southeast corner of Lexington avenue and 50th street; three-story concrete truck house and dormitory, 33'4"x67'6", extension 8'4"x7'6", asbestos roof, cost \$33,000.00, at Fulton and Church streets and at 111th street and 2nd avenue concrete engine house and dormitory 60'x80', extension 23'2"x20'10", asbestos roof, cost \$73,000, three stories in height. The houses to be erected in the borough of Queens are at Spruce street, Richmond Hill, will cost \$40,000.00, and the other on Central avenue, Far Rockaway, cost \$50,000.00. Both houses will be three stories in height and equipped with all modern improvements. The architects for the above structures are Hoppin & Koen, 244 Fifth avenue, New York city.

The Kingston Gas & Electric Company, of Kingston, N. Y., have awarded to Campbell & Dempsey, of 44 Clinton place, Brooklyn, N. Y., the contract to erect a three-story fireproof brick and concrete office building, 100'x100', at Kingston, N. Y. The cost is estimated at \$40,000.00.

O. W. Shelley, 1123 Broadway, New York city, has been awarded the general contract for adding four stories of reinforced concrete to the factory at 93 Boyd street, Jersey City, N. J., for C. F. Mueller. The cost is estimated \$30,000.00. The architect is W. A. Balch, 38 W. 36th street, New York city.

The F. I. Bennett Construction Company, of Camden, N. J., has been incorporated to manufacture cement blocks, building materials and do construction work, with a capital stock of \$25,000.00. The incorporators are F. I. Bennett, L. R. Whitacre, of Merchantville, N. J., and W. B. Wolcott, of Camden, N. J.

REFRIGERATOR FOR E. PORTER BREWING CO. AT LEMONT, ILL.
CONSTRUCTED UNDER THE DIRECTION OF S. LAGGER, PRES.
Scale, 2 FF to 1 inch.



CONCRETE CONSTRUCTION.

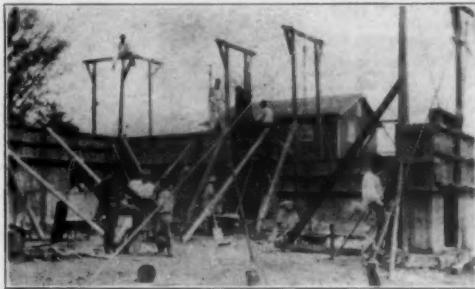
In Porto Rico with Collapsible Forms, which Proved Economical, Efficient and Durable.

By Ralph St. L. Peverley.

In the construction of a series of small concrete passenger station buildings for the Ponce and Guayama Railroad Company, Porto Rico, a system of forms was developed that proved both economical in cost, rapid in erection, and at the same time durable enough to permit of their use, with practically no repairs or renewals, for the construction of six different buildings.

The general type of wall form known as the sectional form was used, but with some variations from the usual practice which experience with this type has proved advantageous. The buildings in question, while differing in interior arrangement, and as to the positions of doors and windows, were all 40'x20' in plan, so that the same forms were used without alteration for all of them, including the construction of an automobile garage, which had concrete walls on but three sides.

Figures 1 and 2 show the general arrangement. The forms are in panels of 20 feet length, two panels enclosing the side of the building and one panel enclosing the end. They are made up of $\frac{3}{8}$ " tongue and grooved flooring nailed vertically to three horizontal lines of 2"x3" scantling. This arrangement is found to prevent warping from the frequent wetting and drying, much better than when the sheeting is nailed horizontally on vertical cleats. The last board on the end of each interior panel is sawed diagonally, forming a key which is left unnailed and serves to wedge up all snug when the forms are in position enclosing the building, also greatly facilitating the removal of forms swollen by the water from concrete. The panels are held together by means of three lines

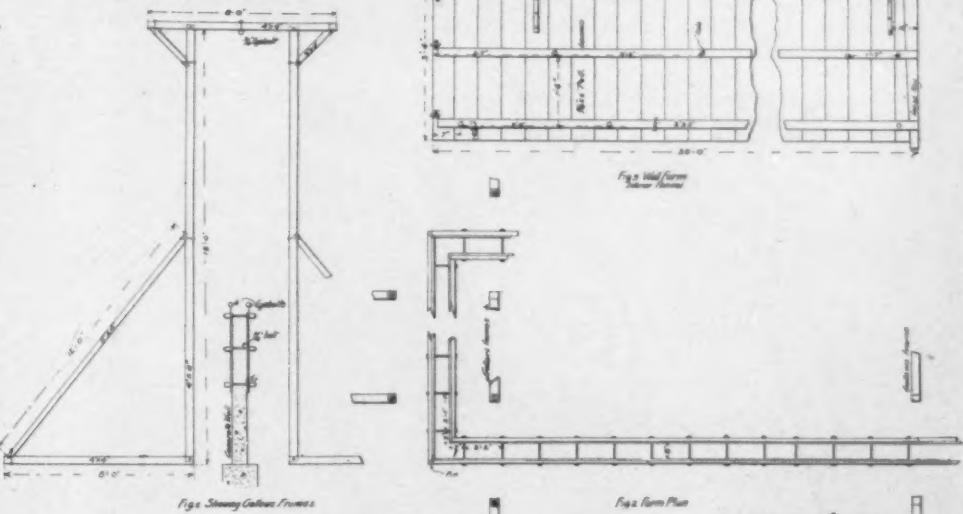


FORMS BEING MOVED AND LIFTED INTO PLACE FOR ANOTHER COURSE (FIGURE 4).

of $\frac{3}{4}$ " bolts which are withdrawn to remove the forms and their holes plugged with rich mortar; wooden separators which are removed as concreting progresses being used to maintain uniform thickness of wall. The forms for the gable ends were built up in one piece in similar forms to the wall panels, but designed to cast the whole gable end in one operation. The gables could, however, have been formed by successive lifts of the wall panels filling only to the desired roof slope.

Figure 1 shows the gallows frames which were built of 4"x4" studding with 3"x4" diagonal braces and the whole fastened together with $\frac{1}{2}$ " bolts. A pair of these frames are placed over each end of a panel and a block and tackle, with $\frac{3}{4}$ " line, fastened into the eye bolt at the top and hooked to a strap iron eye bolt on the form, thus serving to lift the form for a new course after the preceding course has set sufficiently. In the climate of Porto Rico this generally took from twenty-four to thirty hours. Ropes were stretched across the tops of these frames and used for supports to hoist the concrete into the forms permitting of feeding the wet mixture to any point and preventing the concrete running longitudinally and separating its ingredients. After the walls have reached their full height, and the gable ends cast, the bolts were removed from the joints on one end of the top member and the frame taken down.

The buildings for which these forms were designed were built with an 8-inch wall reinforced except where on rock foundations, with $\frac{3}{4}$ " twisted bars spaced three feet vertically and horizontally. Where windows or doors were to be placed a 2"x8" frame was set up inside the forms and anchor bolts with countersunk heads extended through the frame into the concrete, the moldings and trim being fastened on after concreting was finished. A change



in the relative position of openings thus did not require any change in the forms, as these frames could be set anywhere.

The galvanized iron roofing was carried on steel purlins by light steel trusses, built up of angles and bolted to wall plates anchored into the concrete of the walls.

Figure 4 shows the forms being removed and lifted to position for another course, at one end of the building the bolts are being removed from the concrete, at the other end the forms have already been raised and are being filled. In this instance there was a window opening in the center of the rock wall, its frame prevents the concrete from flowing from the form. As a rule, it was found advantageous to arrange the work so that when concreting was progressing at one end of the building forms were being set on the other end.

The photograph, Fig. 5, is of a garage with three sides concrete, the front being all doors.

It shows the appearance of the concrete after the forms are removed; there were very few form marks, on the inside these were removed by wetting and rubbing with a wooden float, and on the outside the surface was picked with a hatchet and scrubbed with a wire brush.

Figure 6 shows a typical station building; the offset corners, belt course at top and appearance of window lintels and sills, is made by a half-inch or three-quarter-inch cement plaster coat anchored by wires set in the concrete when it was poured. In this building the walls are left smooth and brushed with a fiber brush dipped in a solution of cement and water with a little lime added; this tends to give uniformity of color.

The work was done by the forces of the railroad company under the general supervision of Charles W. Fowler, engineer, M. W., by a gang of native laborers consisting of six or eight peons at 75 cents a day, two carpenters at \$1.50 a day, one mason for finishing cement floors at \$1.50 a day, and a general foreman who was in direct charge, and who was paid \$2.25 a day, this gang generally being able to complete an entire building in three weeks.

The Spring Valley Water Company is about to start work on its Calaveras dam in Alameda county, Cal., which will be about the largest reinforced concrete dam in the state. In preparation for the work the company has let a contract for electric current for a period of five years, amounting to 1,000 h. p.,

for the operation of mixers, etc., on the site, and 1,500 h. p. for traction, the intention being to operate all machinery used in the work by electricity.

REINFORCED CONCRETE POLES.

The Chicago Portland Cement Company have issued a booklet on the subject of reinforced concrete poles. It is a reprint from bulletin No. 25 published by the association of American Portland Cement Manufacturers and is compiled by R. D. Coombs, A. M. Am. Soc. C. E., and C. L. Slocum, associate member of the American Society of Civil



TYPICAL STATION BUILDING (FIGURE 6).

Engineers, and it is the most comprehensive work on concrete poles that has been published. It is illustrated throughout and shows practically all of the methods of manufacturing concrete poles to date. Many of the photos were secured at considerable expense and show poles in use in various localities in this country. Comparative costs, designs and tables are given, which are invaluable to the contractor and concrete worker. Copies of this booklet can be secured from the Chicago Portland Cement Company.

WILL INSTALL STEAM CURING PLANT.

Rollin F. Myers, of Hillsboro, Wis., well-known contractor and manufacturer of concrete blocks, is going to build an entire new factory and will install a steam curing plant. Mr. Myers has been very fortunate in securing some very large contracts for blocks for delivery this spring. He has the contract for the large bottling works building for the Hillsboro Brewery and also the engine room building for the same company. He is at the present time shipping blocks for residences for some Reedsburg parties, besides considerable local business.

Among the handsome buildings of Hillsboro is the Congregational church. This is a very ornate structure, built along gothic lines, the entire building being of concrete blocks made by Mr. Myers.

COMPLETES NEW PLANT AT COLUMBUS, O.

The Cunard Lang Concrete Company of Columbus, O., which has recently completed a new plant there for the manufacture of all kinds of concrete blocks and shapes, will have a capacity of 2,000 blocks a day. Modern machinery has been installed and the company is in a position to make any size or shape of concrete blocks.



CONCRETE GARAGE COMPLETED (FIGURE 5).

CONCRETE ROADS.

With Earth Foundations—Specifications Prepared for the Mason Builder by Henry G. Shirley.

The following specifications for concrete roads with earth foundations have been prepared by Henry G. Shirley, roads engineer of Baltimore County, Maryland, for the Mason Builder, the house organ of the Charles Warner Co.:

The earth foundation or sub-grade shall be brought to an even surface by cutting or filling, as may be necessary. All spongy, soft earth or other material not suitable for a foundation shall be removed and replaced with gravel or other good material. The foundation or sub-grade shall be thoroughly compacted by rolling with a roller weighing not less than ten tons. Fills shall be built in layers not thicker than one foot and each layer rolled until compact and hard. When the sub-grade has been brought to a true grade and thoroughly rolled it shall be 7 inches below the furnished grade and parallel to it.

Forms.

Forms shall be of lumber free from warps and not less than $1\frac{1}{4}$ inches in thickness. The forms shall be well staked and braced to the established lines and grades and their top edges conforming with the finished grade of the road.

Concrete Base.

The concrete for the base shall be proportioned, 1 part of Portland cement, 3 parts of sand or clean stone dust, and 5 parts of broken stone. The cement shall meet the requirements of the specifications for Portland cement, adopted by the committee of the American Society of Civil Engineers for Testing Materials. The sand shall pass a No. 4 screen and be free from loam or foreign matter, clean and sharp. The stone shall be good hard blue lime stone, trappe or other material possessing hardness and durability and pass a 2-inch ring and be retained on a $\frac{1}{4}$ -inch ring. The concrete shall be thoroughly mixed either by hand or machine, so that each particle of the ingredient is covered with mortar. The concrete thus mixed shall be spread over the prepared sub-base to a uniform depth, so that when it has been thoroughly tempered it will be 5 inches thick, parallel to and 2 inches below the finished grade of the road.

Top Surface.

The surface course shall have a thickness of 2 inches. It shall be mixed 1 part of Portland cement, 2 parts of clean sharp sand or stone dust, and 3 parts of broken stone. The mixture to be soft so that it can be easily shaped with a templet. It shall be spread on the base within 15 minutes after mixing, and in no case shall more than 30 minutes elapse between the time the concrete for the base has been applied and the placing of the top surface. The cement and sand shall be the same brand and quality as used in the base, and the stone to pass an inch ring and be retained on a $\frac{1}{4}$ -inch ring. After the top course has been applied it shall be brought to an even and uniform surface by passing a special templet over the surface with the ends resting on the forming. The cross slope shall be $\frac{1}{2}$ inch to 1 foot on the concrete surface, and 1 inch to the foot on the earth shoulders.

Expansion Joints.

Across the road, at intervals of 30 feet, expansion joints $\frac{1}{2}$ inch in width and at an angle of 65 degrees with the center line of the road, shall be placed. The expansion joints to be made of tar paper and extend from the earth foundations to the top of the finished surface. A heavy asphaltum or tar filler can be used, but great care shall be taken to see that the joints are well filled and flush with the surface. If the concrete surface extends to the curb a similar joint along each curb shall be provided. All sections shall be completed to an expansion. The surface shall be protected from the sun by covering with paper or canvas and sprinkled with water for at least 3 days. After this period it is to be sprinkled and covered with wet sand about $\frac{1}{2}$ an inch thick. After the concrete has been down about 10 days, the sand shall be removed.

Earth Shoulder.

Earth shoulders shall be constructed on either side for a width of 5 feet and thoroughly rolled until they are compacted and conforming to the grade of the concrete surface.

The Concrete Products & Quarry Company has been incorporated at Dover, Del., with a capital stock of \$100,000. The incorporators were William H. Pearce, I. J. McGeorge, both of Philadelphia, and Philip L. Garrett, of Wilmington, Del. They intend to manufacture concrete bricks, blocks, tile and posts.

The Memphis Biscuit Co. is preparing to erect a four-story factory building in this city, work to start about March 1. Property for the factory has been secured on the Southern Railway west of Raynor avenue. Building will be of reinforced concrete and have a floor space of 400,000 feet. Work will start in the near future at 200-208 Madison avenue on a building for the Memphis Athletic Club. The lot has a frontage of $64\frac{1}{2}$ feet and a depth of 147 feet. The plans contemplate an eight-story building. The board of directors of the club is composed of P. P. Van Vleet, chairman, O. B. Polk, George T. Brodnax and others.

CONCRETE AERIAL SIDEWALK.

Marseilles, Ill., Dec. 21.—Marseilles is seeking a high place in the ranks of cities of its size for concrete construction work. Among the concrete structures are a dam across the Illinois River, the General Roofing Company's large paper mill, a number of bridges, and several miles of sidewalk. A new artistic piece of work is an aerial sidewalk on Glen Avenue, at places twenty feet high in the air, supported by arches and with railings of concrete. All the concrete poles for the power-line between Morris and Ottawa are made in Marseilles.

CONCRETE BUNGALOWS.

Competition Inaugurated by the Cement Products Exhibition Company Brings Out Many New and Original Conceptions.

The concrete bungalow competition of designs is closed, and the designs and plans have been on exhibition at room 1446, No. 72 West Adams street, Chicago, during the past three days. The complete program for the competition was printed in our last issue, and it is not necessary to go into details here regarding the nature of the competition. Quite a number of very handsome designs have been submitted.

The competition shows clearly that a very handsome bungalow can be built out of concrete for less than \$4,000. Many of these designs are quite unique and strikingly artistic. Some of them, indeed, are what might be termed "freaky." All of them indicate, however, that concrete can be successfully employed for a bungalow and produce effects more in keeping with the original idea of a bungalow than with most any other material. When it is taken into consideration that these houses are not only fireproof, but far more durable than any other type of construction, their cost is trifling.

Space will not permit us to go into details in describing the many beautiful and artistic designs submitted. We are, however, reproducing on this page one design, which is typical as showing what can be accomplished and as indicative of the high character of the competition. The description of the design submitted herewith is as follows:

The walls of this bungalow are to be of monolithic construction, both for exterior and interior, the exterior face of outside walls to be treated with acid exposing the aggregate to view; floor and roof to be plain reinforced slabs, the roof to be covered with a tar and gravel composition; floors to be finished with tile or some plastic finish suitable.

It is planned to excavate under the entire house, all to have a cement floor.

The ceiling shall be light reinforced concrete with beams showing in the rooms.

Excavation	\$ 135.00
Concrete work, including walls, floors, roof, porch, terrace floors, steps, basement floor, flues, reinforcing steel, forms for same and labor.....	2,015.00
Finish, including doors, windows, cupboards, other interior finish and labor...	553.00
Roofing tar and gravel.....	100.00
Plastering	152.00
Mantel tile.....	35.00
Hardware	65.00
Sheet metal work.....	40.00
Tile floors.....	536.00
Ten per cent incidentals.....	\$3,631.00 363.10
Contents, 35,632 cubic feet.	\$3,994.10

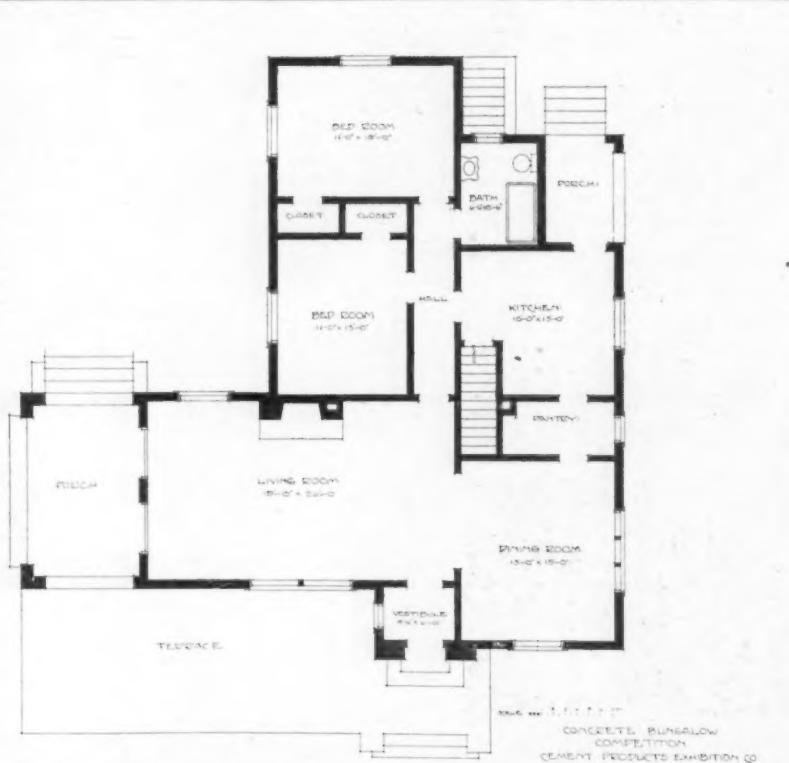
HOUSES OF CONCRETE GROWING IN FAVOR.

Houses of concrete outer walls are growing in favor in Syracuse, New York, owing to the many effects that can be produced and also because of the fact that buildings of this kind require no painting. Cement blocks of various designs are being turned out by the manufacturers, and nearly every kind of stone used in building is closely imitated.

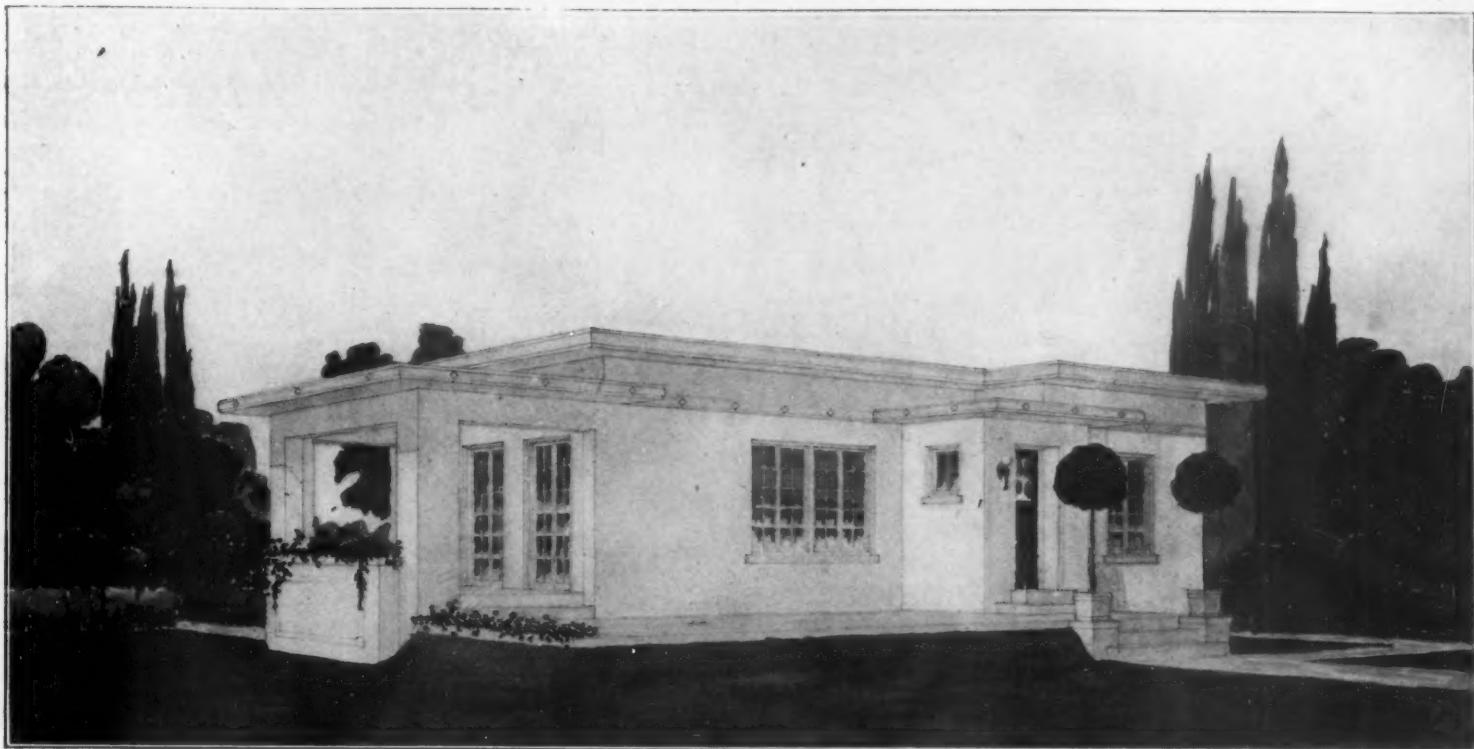
The Portland Cement manufacturers have done much to educate the public along the line of concrete construction by distributing elaborate and costly publications showing the various uses to which concrete can be put.

One of the most popular forms of concrete exteriors among Syracuse architects and builders is what is known as stucco work. Stucco work is nothing more or less than cement plastering. The surface of the frame superstructure is first covered with roofing paper, two thicknesses being preferable. Furring strips are then nailed on about one foot apart, to which the wire lath is fastened. A scratch coat of cement is then applied and pressed through the opening in the laths. This is allowed to set, or harden, when a second coat from one-half to one inch in thickness is put on. For the pebble dash effect a third coat is applied, the cement being mixed with sand and small pebbles.

H. E. Thornton has opened a concrete pipe factory at Escondido, Cal., and has taken a contract for 4,000 feet of 12-inch pipe for the Mutual Water Company.



FLOOR PLAN CONCRETE BUNGALOW.



ONE OF THE DESIGNS SUBMITTED IN THE CONCRETE BUNGALOW COMPETITION.

NORRISTONE.

A Perfect Concrete Material Extensively Used in Building Operations All Over the Country.

A concrete stone that is as nearly perfect in every detail as it is possible to make this type of building material was originated by J. Frank Norris, of Rochester, N. Y. The stone is sold under the name "Norristone," and to Mr. Norris belongs all the credit for the method by which the stone is produced.

A photograph of the large building in which "Norristone" is made is shown with this article. This is the only plant in western New York with a capacity for the curing of every stone. The plant comprises two immense buildings, 250 feet long by 45 feet wide, and it is the largest plant of its kind in the United States. In it twenty-six men are employed in the manufacture of "Norristone," and since building it has twice been enlarged to more readily and efficiently handle the increasing trade in its product. A third enlargement is now in course of construction.

Mr. Norris began the manufacture of concrete stone during the year 1907 in a little shed about twenty feet square. His help consisted of one man. The development of the trade can be judged from the present size of the plant and the number of men employed. The daily output of the plant is 1,200 blocks. The demand has been so steady that the manufacturer cannot get far enough ahead on his orders to allow a month for the curing process of the blocks, as is desired.

Mr. Norris himself superintends the manufacture of the blocks. A look at his countenance shown herewith will give the reader a chance to judge the power of this man over his workmen and the manner in which he gets the best possible results from his process of manufacturing "Norristone."

This stone has gained its great success through its many fine qualities, and the approval with which it is viewed by architects and contractors shows

that no statement can be made concerning it which would be an exaggeration. The paramount idea in all of Mr. Norris' experiments and tests has been to make a better block, or, in other words, a perfect concrete stone. The blocks are hand-tamped, a slower method than machine work and more expensive, but it makes the block better, and when

plants, residences and other types of architecture. "Norristone" has successfully withstood stringent tests of time and fire, a recent example of the last being the factory built of "Norristone" which was recently destroyed by fire in Rochester, leaving nothing standing but the bare concrete walls. These were as good as the day they were put up. When the factory was rebuilt a short time ago these walls were used as they stood, no work on them being needed.

The pleasing exhibit of the Century Machine Company at the New York Cement Show was constructed entirely of "Norristone," and the admiration expressed by visitors to the show upon seeing the exhibit speaks highly for the blocks and their facility for adaptation to architectural beauty.

Mr. Norris uses the Hercules block machines, manufactured by the Century Cement Machine Company, of Rochester, N. Y.

CONCRETE STRUCTURE IN CHICAGO.

The building for Dwight Bros. Paper Company, to be erected at 366-76 Clark street in Chicago, will have a frontage of 126 feet on the west side of Clark street and will be 100 feet in depth.

It will be a ten story and basement structure of reinforced concrete on concrete caissons founded on bed rock 105 feet below the sidewalk. The floors will be of finished cement and the flat ceilings unbroken by beams or girders. The street and alley elevations will have an unusually large glass area, and the stories will be of good height.

The lower part of the Clark street elevation will be of polished and cut granite, the upper stories of a high-grade pressed brick and terra cotta. The concrete of the reinforced columns which are exposed in the Clark street elevation will be composed of a crushed granite aggregate and treated by a special process to insure a surface of proper texture and harmonious color. The building will have two passenger elevators and two freight elevators.

Richard E. Schmidt, Garden & Martin are the architects.

A GOOD SEASON.

Humboldt, Tenn., June 15.—J. E. Campbell here is manufacturing concrete blocks and handling builders' supplies. Mr. Campbell is having a good season.

W. S. Monroe, who came here a few months ago from the North, is also conducting a concrete business and has completed considerable municipal paving work.



J. FRANK NORRIS.

they are cured the highest pressure available at the Mechanics' Institute, which is about 220,000 pounds, failed to crack them in the slightest degree.

Many of the largest plants and most beautiful and lasting residences in Rochester have been constructed from this class of material, among them being the Gleason Tool Works, Iroquois Office Building, warehouse of the Geo. K. Higbie Company and the residence of Daniel J. School. Not only these local structures have been built from "Norristone," but throughout the country there are beautiful and lasting monuments to the product in the form of



WHERE NORRISTONE IS MADE.

CONCRETE VIADUCT.

Being Constructed at Louisville Presents Interesting Problems, Owing to Its Location.

If there is one division of business which has placed the stamp of approval on concrete construction more than any other it is the railroads. While this statement is subject to qualification, it is undoubtedly true that the big transportation companies, as the result of the constant efforts of their engineers to find the most efficient and economical



COMPLETE REINFORCED CONCRETE ABUTMENT.

method of getting the desired results, are consuming cement in larger and larger quantities.

It is pretty well understood that the railroads are not throwing very much money away, Louis Brandeis to the contrary notwithstanding, and the fact that they have adopted concrete as a construction material so generally is conclusive proof that cement is both effective and economical as compared with other methods.

Whenever there is a big piece of construction work put out by the railroads, it usually happens that the specifications call for a large share of concrete. Reconstruction work involves it as well, and if a bridge is to be strengthened or remodeled, the work is usually done with cement as the principal material.

An excellent example of the adaptation of concrete to the needs of railroads is given in the big viaduct which is being constructed in Louisville by the Chesapeake & Ohio, Big Four, and Louisville & Nashville Railroads. The viaduct will elevate a lot of traffic that is now congesting the yards in the eastern part of the city, and is being built in two sections, the first of which is well on toward completion. It is 1.4 miles in length.

The superstructure of the viaduct, of course, will be of steel, but the foundations and supports are of concrete, the contract for this work having been let to B. C. Milner's Sons Company, of Louisville.



PEDESTALS FOR VIADUCT.

The cost of the concrete construction will be in the neighborhood of \$75,000.00.

The concrete work consists of pedestals, upon which the steel girders are to be placed; retaining walls and abutments. The pedestals rest upon concrete piles, and several hundred of them are provided for. The piles are, of course, reinforced, and the abutments, where special strains are anticipated, also carry considerable reinforcing. The remainder of the work is solid concrete construction.

The feature of the job as developed thus far by Charles F. Fitch, who is superintending the work for the Milner company, is in connection with the nature of the soil. The viaduct is located in what is known as "The Point," a part of Louisville

which consists principally of low land and a large part of which is subject to overflow. The condition of the soil in a great many places is boggy, and the difficult situation is emphasized by the fact that at one point, for a distance of 1,600 feet, the soil consists of the deposits in an old city dump, refuse and garbage which have accumulated for years extending to a depth of 18 to 25 feet.

Preparing soil of this kind for the reception of concrete work has been, of course, by no means an easy task. In the case of the extremely low land, where the experience of past years has shown that the flood waters of the Ohio river, which under ordinary conditions is about a quarter of a mile distant, are likely to reach, the piling has been driven exceptionally deep.

In cases where it was thought that the piling would be constantly exposed to water, wood was substituted for concrete, and the pedestals placed upon piling of this material. In other cases, in order to minimize the probable effects of constant dampness, both wood and concrete were employed in the piling, several piles being of wood and the remainder of concrete.

For example, one wooden pile was driven 60 feet deep, compared with an average depth of 35 feet. Many of the concrete piles, however, were sunk a distance of 42 or 44 feet.

In order to meet the situation caused by the garbage deposits, excavations were made to a depth of 7 to 10 feet before any attempt was made to drive the piles. They were then sunk deeper than usual, concrete being used altogether here; and the pedestals were thus given support which is absolutely independent of the made soil.

There has been considerable excavation done in order to secure the proper grade, the depth of the excavations varying from 4 to 20 feet. In a good many cases it has been found advisable to erect retaining walls, these being reinforced and erected with the use of the Blaw collapsible steel forms. Mr. Fitch, who has superintended the work, is an enthusiast on the subject of Blaw forms, which he used with excellent results in the construction of sections of the Southern Outfall sewer in Louisville, one of the largest pieces of concrete sewer construction handled in the country in recent years.

The piles, which are 18 inches in diameter at the head, are of the Raymond type, the core being pulled after the shaft has been sunk and the shell filled with reinforced concrete, the reinforcing being secured, of course, through the use of a cylinder made of bars extending the length of the pile and marked at intervals of a few inches with rings of smooth steel. The Raymond method has proved exceptionally successful in this case, for while the soil was of such a character as to require careful treatment, it was also unusually soft and the drilling of the holes for the piles has been accompanied by little difficulty.

The pedestals placed on the concrete piling are 7 feet deep and are from 8 to 9 feet high. Half have been built in hexagon form and half square. They are 3 feet 6 inches in diameter and many are supported by seven piles.

The retaining walls and abutments have been erected without piling, and are of solid concrete with comparatively little reinforcing. The reinforcing which is used principally consists of cold twisted bars, the product of the Carnegie mills.

Speed's cement is being used on the job, which will be completed by August 1, it is thought. The concrete is being mixed in two ways, the proportions being one, two, four, with the aggregate of 1½-inch crushed stone, for the piling and abutments, while in the case of the pedestals and retaining walls the engineers specified that the mix be in the proportions of one, three and six, and that gravel be used. Ohio river sand is being used throughout.

The equipment was considerably diversified, Smith, Cube and American mixers being used. The topography of the section where the work is being done is such as to require a good deal of rough usage, and the mixers are stated to have given excellent service in spite of this feature.

There are five abutments to be built, two of them being on opposite sides of Beargrass creek, which intersects the course of the viaduct. The foot of these abutments rest in the water, and coffer-dams are, of course, necessary in their construction. Otherwise their erection offers comparatively little difficulty.

The viaduct is being erected along the same right of way as used by the Big Four railroad in its approach to its bridge over the Ohio river. It has been in use for several years, and the supports which were built for it are of concrete. Comparison with these shows that concrete engineering has progressed considerably, as various differences in the work are noted. Probably the most conspicuous is that the pedestals for the viaduct are much heavier than those for the older structure.

Side Talk

in which the Advertiser tells his own story

A directory of Portland cement manufacturers, together with manufacturers of gypsum and lime, has been issued by the Cement Era. This book is a pocket edition and contains much useful information on the above subjects. The book retails for \$1.00.

The June bulletin of the Lehigh Portland Cement Company contains much information about various concrete jobs on which the popular "Lehigh" has been used. This bulletin is published in attractive form and is well worth the attention of cement users.

"Smith Crushing Equipment," just from the press, issued by The T. L. Smith Company, Milwaukee, Wis., manufacturers of Smith Mixer, Simon's Crusher and Contractors' Equipment, is a handsomely illustrated publication and typographically attractive and will prove of interest generally to the trade. Copies free on application by mentioning ROCK PRODUCTS.

"Cement, Sand and Gravel for Concrete" is the title of the Chicago Portland Cement Company's latest publication. It guides the cement user in his selection of sand and gravel—it tells how to judge, wash and screen sand—it explains why "Chicago AA" Portland cement is the best that can be made and contains a full list of the company's instructive booklets, fully indorsed by the leading farm journals.

The Edgar Allen American Manganese Steel Company has recently issued a booklet entitled "Manganese Steel and Its Application to Ceramic Industries." It contains a copy of a paper read by G. W. Kneisly before the twenty-fifth annual convention of the National Brick Manufacturers' Association at Louisville, Ky. Those who desire a copy of this booklet can secure the same by addressing the company and mentioning this paper.

The Stephens-Adamson Manufacturing Company, manufacturers of conveying, transmission and screening machinery, of Aurora, Ill., announce the establishment of an office at Portland, Ore. This office will be in charge of R. G. Cornell, at 303 Abington building. Mr. Cornell was formerly in the engineering department and later in the sales department of the main office of the company at Aurora. He is well equipped, therefore, to handle the business in the far western territory.

A booklet has recently been published by Wadsworth, Hawland & Co., Inc., Boston, Mass. It treats on Bay State Brick and Cement Coating for the decoration and protection of concrete, cement, brick and stucco. This booklet is neatly gotten up, contains numerous illustrations of public buildings and private residences scattered throughout the country from the Atlantic to the Pacific coast, treated with these well known coatings manufactured by Wadsworth, Hawland & Co., Inc. It contains much information of interest to the building trades.

SHELTON CONVERTIBLE DUMP CARS.

The Ernst Wiener Company, 50 Church street, New York City, has recently acquired the right to build the patented Shelton convertible dump cars for narrow gauge and to sell them in the United States and Canada. A new circular on these cars has recently been issued and can be secured from the above company, free.

THE CEMENT DEALER.

The Cement Dealer is the title of a new booklet published by the Chicago Portland Cement Company. Robert Crawford, advertising manager of the company, originated the idea.

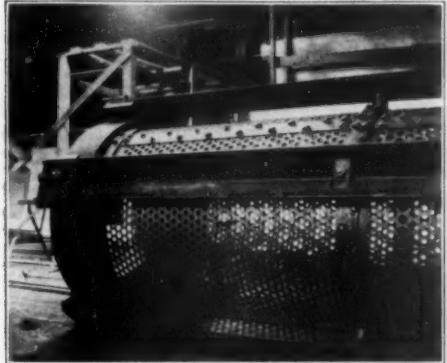
The magazine is to be issued periodically and is devoted exclusively to the interests of the dealer in Portland cement. New ideas are brought forth and old ones enlarged upon and altogether the magazine reflects credit on its publishers and editors.

Some of the chief articles contained in the magazine are: The Ever-Increasing Cost of Lumber; The Dealer as First Aid; The Dealers' Interest in the Work of the Country Newspaper and Association Items.

ROCK PRODUCTS

REVOLVING SCREENS FOR SAND AND GRAVEL WASHING.

The two sectional photographs shown herewith are of a new type of revolving screen for heavy service sand and gravel washing, designed by an old government engineer of some forty odd years' experience, for dredge use in the washing and sizing of sand. The difficulty heretofore was in making a large screen of twenty-foot span rigid enough to overcome the severe strain without breaking or without entailing a heavy angle-iron construction. In cases where transmission power of the screen should break and the digging appa-



SECTIONAL VIEW OF BECKLEY PERFORATING COMPANY'S SCREENS.

ratus piling the screen full of silt, sand and stone, the five-angle bar screen prevents the strain coming entirely upon one angle bar at any one time. There are always two and sometimes three bars taking the strain.

Another feature of importance is the elimination to a large extent of the sag of these screens, which have a tendency to loosen the connection between the angles and the screen proper. These screens are often made with outside jackets and are capable of taking care of 2,000 yards per day.

The Beckley Perforating Company, of Garwood, N. J., the builders of these screens engaged some fifteen years ago in manufacturing sand-washing and gravel-washing apparatus, a little later took



SECTIONAL VIEW OF BECKLEY PERFORATING COMPANY'S SCREENS.

up the problem of sand washing for filtration plants and for a number of years manufactured all the screens for sizing and screening sand and gravel for the Philadelphia filtration plant. It also spent a number of years in experimenting, and furnished all of the washing screens for the Pittsburgh filtration plant and is now engaged in plans for the handling and washing of sand for a large enterprise in the South.

The fifteen years' experience of this concern has brought it experience in the treatment of sand and gravel, and the loam and clay which the sand contains, and advises correspondence by parties interested in sand and gravel-washing propositions.

It may add that the men connected with this concern are interested in the manufacture of screens for all kinds of stone crushing, cleaning, grading of ores, phosphate mining and a large variety of enterprises in which screens are used, and it is learned that their experience has placed this concern in a position to advise in almost any enterprise where screens are needed.

The Central Equipment Company, located in the Ford Building, Detroit, Mich., is handling good second-hand machinery for cement, lime and crush-

ing plants and plants of kindred nature. It also includes second-hand machinery for all plants which have to contend with the mining, transporting, crushing, pulverizing, drying or burning of any materials. It publishes a monthly stock sheet, which it will be pleased to send to all parties interested. It guarantees all of its machinery to be just as represented and is in position to supply anything in the above lines at a great saving over the cost of new machinery, which at the same time will give practically as good results. The men connected with this company are old in the cement industry and therefore especially fitted to handle this class of equipment. This company is meeting with exceptional results in the fields it canvasses.

EDISON GIANT ROLL PATENTS SUSTAINED.

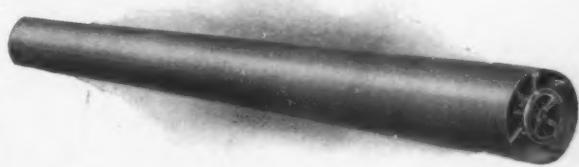
An important decision has just been handed down by Judge Hazel in the United States Circuit Court of the Western District of New York in a suit against the Allis-Chalmers Company, and two of its customers, the Empire Limestone Company and the Casparis Company, on Edison patents, Nos. 672,616 and 672,617, granted April 23, 1901, on the so-called Giant Rolls. Judge Hazel referred to the patents under consideration and set forth a judicial review of Edison's accomplishments.

The court then referred to the claims of the two patents, one covering broadly the method involved in crushing rock by kinetic energy and the other relating to the apparatus employing the two massive rolls, which are so driven as to permit the crushing and breaking to take place. It was urged in defense of the suit that crushing rolls of much smaller size had been used generally, geared together, and that no invention would be required to increase the size and weight of such rolls and to dispense with the gear so as to permit the rolls to operate independently.

The defendants' structure was practically a copy of the Edison rolls, and the court therefore had no difficulty in promptly deciding them to be an infringement. On this subject the court said: "To summarize, the defendants' rolls in operation are substantially the same as those of complainant, having a like capacity for crushing rock; they use the kinetic energy to break the material periodically dumped upon the rolls and in their operations perform the functions of the patents in suit and achieve the same results. The method patent describes the mode of treatment of the rock by which it may be shattered and the series of steps to be taken in the transforming process. The combination of elements by which the splendid results of breaking rock by blows due to the use of kinetic energy were attained undoubtedly involves the exercise of invention as distinguished from mechanical skill. The prior art neither suggested the patentee's method nor the apparatus by which the work could be done."

BRIDGE AT NOBLE, ILLINOIS.

This bridge was built at Noble, Ill., about two years ago by the Portland Concrete Company, of that city. The width of the bridge is six feet, containing a four-foot cement sidewalk with 2-inch gas pipe hand rails on each side. The arches in this little bridge were constructed by using the



Miracle Collapsible Steel Forms, furnished by the Marsh Company of Chicago.

These forms are circular in shape and are extensively used in building road culverts and sewers. The forms and arches are three feet in diameter.

Concrete tile sixteen inches diameter was placed over the openings, constructed with the forms, to take care of any overflow. The retaining walls at the ends of the bridge for supporting the earth fill were made of concrete blocks, so the entire structure from end to end is of concrete with absolutely no other material, with the exception of a small amount of reinforcement and the hand rails.

The total cost of construction, including reinforcement, labor and material, is figured at \$5.50 per running foot.

THE STURTEVANT MILL CO.

The Sturtevant Mill Company, with offices and works, Harrison square, Boston, Mass., builds fine crushers and puts the right "stuff" into them where it belongs, regardless of cost, then adds a fair profit and gives its customers the best that money and brains can produce at a very reasonable price.

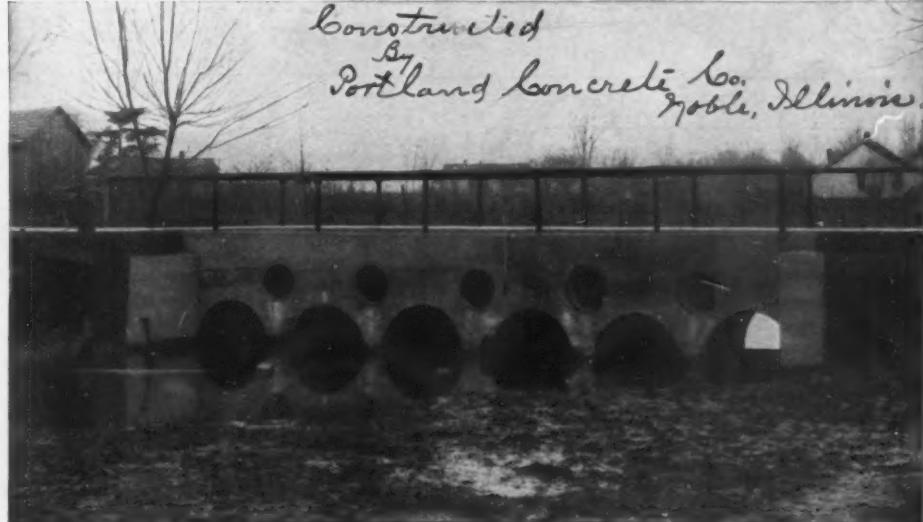
4x 8 size sells for.....	\$250.00
5x10 size sells for.....	350.00
6x15 size sells for.....	650.00

Larger sizes for fine or coarse work, furnished when desired. The company states that these are not expensive when one considers the amount and quality of its output, their small up-keep and enormous strength. It publishes a handsome illustrated catalog which it will send to parties interested on application.

GALVANIZED METAL FORMS.

C. W. Withoeft, patentee, with E. R. Seidel, J. W. Turner and Judge John A. Talty have incorporated a company for the manufacture of patented monolithic concrete galvanized metal forms and moulds. They are easily and quickly adjusted to any size structure, saving cost, time and labor, and into which concrete can be poured in one solid mass, producing any desired effect, plain or ornamental, in any size buildings, smoke stacks, sewers and all manner of concrete construction. When the forms and moulds are removed the work is finished. The offices of the company are in the Fullerton building, Seventh and Pine streets, St. Louis.

The contract for placing concrete piles in the foundations for a new building to be erected for the American Dock & Trust Company, Thompkinsville, S. I., N. Y., has been awarded to the Raymond Concrete Pile Company, of New York and Chicago.



THE EHRSAM WOOD FIBER MACHINE.

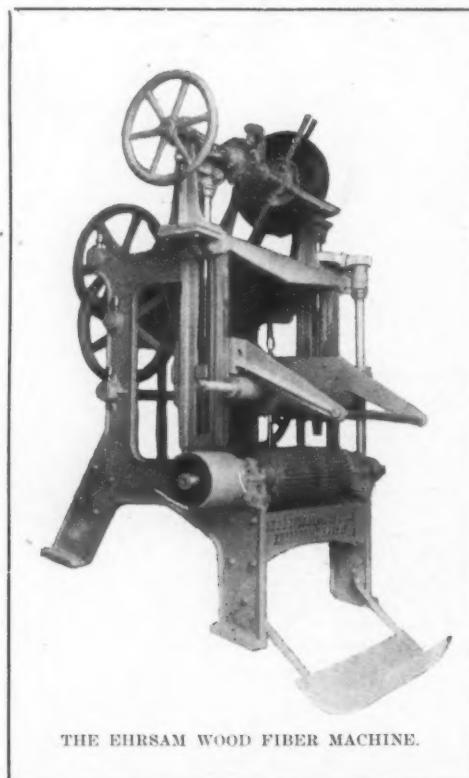
This wood fiber machine is built after an entirely new design, and is the result of long experience. The operation of it is as follows:

The operator puts in the log; throws the machine into gear; and the log starts to revolve and is fed to the saw. As the log decreases in diameter, the speed of the log and of the feed increases automatically. In other words, the peripheral speed of the log remains constant, and the feed of the log to the saw is in direct proportion to the speed of the log.

After the log is cut down to about three inches in diameter the machine automatically reverses itself, and the carriage holding the log starts upon its return travel. After the carriage is back to the desired point the machine automatically throws itself out of gear, and the carriage stops. The machine is then ready for the old log to be removed and a new one put in.

Like all of the other machines manufactured by the Ehrsam company, this wood fiber machine is constructed in an absolutely first-class manner. All of the working parts are planed. All of the gears are cut from solid. All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position. The saw material is extra heavy, and made of the best crucible steel. The journals are chain oiled. There is probably no other wood-fiber machine on the market more substantially built than this one.

The chief point of superiority of this fiber machine lies in the fact that the increase in the speed of the log and of the feed of the log is automatic and absolutely positive, there being no frictional devices (which are so liable to get out of order and slip) employed. The automatic increase in the speed of the log, as the diameter of the log decreases, is accomplished by means of flat tempered steel bands, winding from spool to spool. This automatic uniformity of feed insures uniformity of fineness in the product.



THE EHRSAM WOOD FIBER MACHINE.

In this connection a cone pulley is placed on the machine, and by slipping the belt over to a slower or faster step, a coarser or finer grade of fiber is produced.

The hand wheel shown in the cut is for the purpose of bringing a narrow log more quickly to the saw, or for running the log holder up when the machine is not in operation.

Having subjected this fiber saw to numerous and most severe tests, the manufacturers absolutely guarantee it, and are confident it will prove a great success wherever introduced. The builders of this machine are The J. B. Ehrsam & Sons Mfg. Company, Enterprise, Kansas.

MORTAR COLORS.

Most of the many different materials employed during the erection of a building may be thoroughly tested in advance before being incorporated into the structure, so that the contractor knows that he may safely buy from almost any source, trusting to his tests to tell whether the material is good or not. The only preliminary tests that could be applied to mortar colors, however, would be those involving a chemical laboratory which, of course, in most instances, is highly impracticable.

A poor mortar color may appear absolutely satisfactory until after it is put up, and then, of course, mistakes cannot be remedied. Fading by the sun, changing color under the chemical action of gases in the air, or worse still, spreading and washing out with every rainstorm—these are the things the builder fears. The only safe way to purchase mortar colors is to stick to a well known brand like Ricketson's, where the reputation of the product takes the place of preliminary tests. The special process by which Ricketson's "Red Brick" brand mortar colors are made, renders them absolutely stable under the most trying conditions. Every barrel is as good as an insurance policy against mortar color troubles of any sort.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion 25 cents a line
For two insertions 45 cents a line
For three insertions 60 cents a line

Eight words of ordinary length make one line.

Heading counts as two lines.

No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYMENT WANTED**WANTED.**

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

CONCRETE EXPERT.

Concrete expert with many years' practical experience seeks position as foreman in block plant. Understands planning, detailing, and erecting of residences, factories, etc. Can originate, model and mold any kind of trimmings, figure or ornamental—at lowest cost. Or would rig up plants, which from lack of practical knowledge, may have been a failure. Address "CONCRETE EXPERT," Care ROCK PRODUCTS.

MANAGER OR SUPERINTENDENT.

Man of wide experience in cement mill practice wishes position as manager or superintendent. Has had charge of both good and bad propositions. Prefers location west of Mississippi, but will go anywhere. Correspondence solicited.
Address D. V. J. C., care ROCK PRODUCTS.

MANUFACTURER'S REPRESENTATIVE.

Experienced salesman, well educated, and amply qualified for such service. Address 926 REAL ESTATE TRUST BLDG., Philadelphia, Penn.

EMPLOYEES WANTED**LIME BURNERS.**

Wanted—Experienced burners. Good pay. Address CHURCH QUARRY CO., Sibley, Mich.

BELT SALESMAN.

Wanted—A first class belt salesman to sell belting for a large manufacturer. Address full particulars to "BELTING," care ROCK PRODUCTS.

MATERIAL FOR SALE**RUBBER BELT FOR SALE.**

Two pieces new belt, each 215 feet. 18 inches wide, 5 plies rubber belt with $\frac{1}{2}$ extra rubber one side. Price, 80c per foot f. o. b. factory Chicago.
Address A. M. BLODGETT CONSTRUCTION CO., Kansas City, Mo.

BUSINESS OPPORTUNITIES**PATENTS SECURED FOR INVENTIONS.**

C. L. Parker, ex-examiner U. S. patent office, 956 G St., Washington, D. C. Write for inventor's handbook.

YOUR CHANCE.

For manufacturing cement products, a sand hill, finest quality of sand factory building 765 feet long. Will sell, lease or entertain proposition, also complete cement post outfit for sale; full set of machinery, all patented, including molds, etc.

Address 803, care ROCK PRODUCTS.

AGENCY FOR SEWER PIPE WANTED.

Young man, covering the retailers of builders' supplies in New York City, would like to handle, in connection with his present cement business, an agency for sewer pipe or similar masons' supplies. Has good connections.

Address 805, care ROCK PRODUCTS.

PLANTS FOR SALE**A BARGAIN.**

For Sale—A complete rock crushing plant with a 17 year lease on quarry. Location, northern Texas. The equipment includes two No. 7 $\frac{1}{2}$ and one No. 5 Gates crushers with elevators, screens and power plant; railroad facilities. Write for particulars and prices.

MARSH CO., 971 Old Colony Bldg., Chicago, Ill.

My SPECIALTIES are Steam Shovels, Locomotives, Cars**For Sale:**

100 ton Vulcan Steam Shovel; new boiler.
70 C Bucyrus, \$6,000; Shop No. over 1000; nearly new.
5 Steam Shovels in Montana; good ones; 1-70 Bucyrus,
3 Little Giants, 1-70 ton Vulcan.
60 Marion; Shop No. near 1600.
15-20 ton Locomotive Crane, Industrial.
100-4 yd. K. & J. 36 in. gauge Dump Cars.
60 Western 36 in. gauge Dump Cars.

Special:

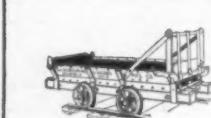
2-65 ton Marion Steam Shovels at \$3500 each; Kansas City or St. Louis delivery.
50-6 yd. (4 ft. 8 $\frac{1}{2}$ in. gauge) Oliver Dump Cars.
80-5 yd. (4 ft. 8 $\frac{1}{2}$ in. gauge) Western Cars.
40-6 yd. (4 ft. 8 $\frac{1}{2}$ in. gauge) K. & J. Cars.
12, 14, 18 ton 36 in. gauge Dinkeys. What make do you want?
15x24 Saddle Tank and all other types of Standard Gauge Locomotives. Write for Prices on Anything Wanted not mentioned here.

FRED. A. PECKHAM, Suite 1122-3 McCormick Building, Chicago

**THE HENRY MARTIN BRICK
MACHINE MFG. CO.**
LANCASTER, PENNA.

ROCK CRUSHING MACHINERY
BRICK-MAKING MACHINERY
CLAY - WORKING APPLIANCES
CEMENT BRICK
MACHINERY
SAND GRINDING
MACHINERY
SAND DRYERS, BRICK DRYERS, ETC.

SEND FOR PLANS AND ILLUSTRATED CATALOGUE



**"K & J" CARS
FOR QUARRIES**

Are Heavily Built for
Continuous Service.

The above car carries 3½ tons of stone;
cubic capacity 42 ft.; gauge track 36 in.
We build cars to any specifications to
fit your work. Catalog 60-J.

THE KILBOURNE & JACOBS MFG. CO.

Plant and Gen'l Offices at COLUMBUS, O.

NEW YORK 26 Broad St.

**IMPORTANT
Advertisers—Take Notice**

Changes of Copy

Must be in this office by the Fifteenth of the month, if proofs are desired; if no proofs are required the desired changes can be made if copy is received by noon of the Nineteenth.

New Advertisements

To insure proper classification, should be in this office by the Fifteenth of the month, but they can be inserted in the last form going to press if received by the Nineteenth. The punctual publication of the paper admits no deviation from these rules. Advertisers are earnestly requested to co-operate with us.

THE FRANCIS PUBLISHING COMPANY

537 South Dearborn Street, Chicago, Ill.

**Fast Trains
Day
and
Night**

on the

MONON ROUTE

**EXCELLENT SERVICE
BETWEEN**

**Chicago
La Fayette
Indianapolis
Cincinnati
Dayton
West Baden and
French Lick Springs
Louisville**

Electric Lighted Standard Sleepers on Night
Trains, Parlor and Dining Cars on Day Trains

Frank J. Reed, G. P. A. E. P. Cockrell, A. G. P.
CHICAGO

Some Bargains in Quarry Equipment

STEAM SHOVELS

One No. 0 Thew full circle traction.
One No. 1 Thew full circle traction new boiler and dipper.
One Little Giant Traction Shovel 1½ yard bucket.
One Marion 60 ton, 2 yard bucket model 50, No. 1728.

COMPRESSORS

One Ingersoll-Sargent class A 10x10½x12, capacity 177 feet.
One McKiernan straight line 16x16x18, capacity 500-550 feet.
One Ingersoll-Sargent class H 12x12x12½, capacity 475 pounds.

SCREENS, ELEVATORS, HOISTS, ETC.

We have a complete line of standard Gates, Austin and other screens and elevators, and everything in hoisting appliances.

Write for our May Bulletin of Bargains in Heavy Equipment Before You Buy. A Postal-Card Brings It.

MARSH COMPANY,

971 Old Colony Building,

CHICAGO, ILLINOIS

Index to Advertisements

Actna Powder Co. 17	Chemical Stucco Retarder Co. 76	Houston Bros. Co. 67	National Lime & Stone Co. 12	Southwestern States Portland Cement Co. 42
Allen, Edgar, American Man- ganese Steel Co. 44	Chicago Belting Co. 1	Howells Mining Drill Co. 69	National Mortar & Supply Co. 10	Southern Railway Co. 11
Allentown Pt. Cement Co. 1	Chicago Portland Cement Co. 42	Hunt, Robt. W., Co. 78	National Retarder Co. 76	Spackman, Henry, Eng. Co. 18
Alpha Portland Cement Co. 2	Chicago Structural Tile Co. 56	Improved Equipment Co. 15	Nephi Plaster & Mfg. Co. 53	Standard Portland Cement Co. 1
Aluminate Patents Co. 14	Chrome Steel Works. 56	Independent Powder Co. of Mo. 17	Niagara Gypsum Co. 77	Standard Scale & Supply Co. 58
American Cement Co. 84	Classified Business Directory 55	Ironton Portland Cement Co. 2	Northwestern States P. C. Co. 2	Sauer's Portland Cement Co. 42
American Clay Machine Co. 83	Clinton Metallic Paint Co. 78	Johnson & Chapman's Co. 65	Nuttall, R. D., Co. 66	Stacy-Schmidt Mfg. Co. 14
American Dynalite Co. 16	Concrete Stone & Sand Co. 81	Jones, F. A. 53	Ohio and Western Lime Co. 11	Steel Protected Concrete Co. 44
American Locomotive Co. 70	Coploly Cement Mfg. Co. 42	Kent Mill Co. 57	Ohio Ceramic Eng. Co. 63	Stephens-Adamson Mfg. Co. 43
American Process Co. 18	Cummer & Son Co., F. D. 18-75	Keystone Traction Drill Co. 69	Ohio Retarder Co. 76	St. Louis Portland Cement Co. 65
American Pulverizer Co. 63	Currie & McLaren. 53	Kilbourne & Jacobs Mfg. Co. 54	Ottawa Silica Co. 1-43	Sturtevant Mill Co. 65
American Steel and Wire Co. 7	Cyclone Quarry Drill Co. 69	King, J. B., Co. 54	Pekham, Fred A. 52	Superior Portland Cement Co. 43
American Well Works, The. 69	Dakota Plaster Co. 75	Kilpatrick Sand & Cement. 1	Peerless Brick Mfg. Co. 80	Symons Brothers 6
Atlantic & Gulf Portland Ce- ment Co. 1	Davenport Loco. Works. 16	Kelley Island Lime & Trans. Co. 12	Pennsylvania Crusher Co. 2	Taylor Iron & Steel Co. 64
Atlas Car & Mfg. Co. 84	Dexter Portland Cement. 1	Lakewood Lines. 63	Perfection Block Mach. Co. 78	Traylor Engineering Co. 6
Atlas Portland Cement Co. 84	De Smet, George W. 8	Lehigh Portland Cement Co. 2	Pettyjohn Co., The. 78	Troy Wagon Works. 65
Austin Mfg. Co. 60	Duff Patents Co. 15	Lewistown Edy. & Mch. Co. 66	Phoenix Portland Cement Co. 1	
Automatic Weighing Mchne. Co. 42	Dull, Raymond W., & Co. 64	Louisville Fire Brick Works. 82	Plymouth Gypsum Co., The. 75	
Bacon, Earl Co. 60	Dunning, W. D. 83	McCormick Waterproof Port- land Cement Co. 9	Power & Mining Mch. Co. 4	Underwood Typewriter Co. 53
Barrett Mfg. Co. 57	DuPont Powder Co. 17	McDonnell Boiler and Iron Works. 75	Raymond Bros. Impact, Pul. Co., The. 62	Union Mining Co. 1
Bartlett, C. O., & Snow Co., The. 67	Ehrsam, J. B., & Sons Mfg. Co. 72	Macneal, Jas. B., & Co. 53	Reeb, M. A. 76	Union Sand & Material Co. 41
Beckley Perforating Co. 64	Eureka Stone & Ore Crusher Co. 66	Main Belting Co. 66	Richards, M. V. 11	United States Gypsum Co. 73
Belt, C. T. 53	Farnham Cheshire Lime Co. 11	Marblehead Lime Co. 11	Ricketson Mineral Paint Works. 2	United States Marine Sig. Co. 83
Binns Stucco Retar- der Co. 76	Fishback Gypsum Co. 44	Marion Steam Shovel Co. 71	Ruggles-Coles Eng. Co. 18	Universal Portland Cement Co. 41
Books for the Trade. 68	Fowler & Pay. 11	Marquette Cement Mfg. Co. 1	Sackett Screen & Chute Co. 64	Vulcan Steam Shovel Co. 71
Buckbee, J. C., Co. 2	Francis Mch. Co. 53	Martin, Henry, Brick Machine Mfg. Co. 68	Salisbury, W. H., Co. 64	Wadsworth-Howland Co. 8
Buckeye Fire Clay Co. 82	French, Samuel H., & Co. 1	Maumee Chemical Co. 64	Sandusky Portland Cement Co. 18	Webster Mfg. Co. 67
Buffalo Wire Works Co. 64	Gandy Belting Co., The. 67	Meacham & Wright. 42	Schmatz Bros. 57	West Jersey Bag Co. 41
Butterworth & Lowe. 75	Giless Co. 82	Miller, Clifford L., & Co. 12	Sclato Lime & Stone Co. 11	Wheeling Wall Plaster Co. 77
Caldwell, H. W., & Son Co. 66	Gildem Varnish Co. 8	Mitchell Lime Co. 12	Williams, C. K. & Co. 18	Williams Contractors' Supply Co. 18
Carolina Portland Cement Co. 81	Good Roads Construction Co. 60	Monon Route. 54-70	Security Cement & Lime Co. 41	Williams Patent Crusher and Pulverizer Co. 58-59
Cement Tile Mch. Co. 80	Good Roads Mach. Co. 68	Monon Route. 54	Shaw, Wills, Machinery Co. 53	Wolverine Portland Cement Co. 42
Central Equipment Co. 53	Gardner Crusher Co. 61	Maucham & Wright. 42	Shuart-Fuller Mfg. Co. 75	Woodville Lime & Cement Co. 10
Century Cement Mach. Co. 82	Gearless Co. 67	Miller, Clifford L., & Co. 12	Sixty City Cement Machinery Co. 80	Worrell, S. E. 18
Ceresit Waterproofing Co. 10	Giddens Varnish Co. 8	Mitchell Lime Co. 12	Smith, F. L. 60	Yates, Preston K. 53
Chalmers & Williams. 60	Good Roads Mach. Co. 68	Monon Route. 54	Smith, T. L., Co., The. 5	
Chase Foundry Mfg. Co. 80	Gardner Crusher Co. 61			
Chattanooga Paint Co. 82	Harrison-Walker Refractories Co. 1			

CLASSIFIED BUSINESS DIRECTORY

BAGS.

Urschel Bates Valve Bag Co.
West Jersey Bag Co., The

BAG TIERS.

Miller & Co., Clifford L.

BALL MILLS.

Power & Mining Mch. Co.
Traylor Engineering Co.

BELTING.

Chicago Belting Co.
Gandy Belting Co.
Mahn Belting Co.
Salisbury & Co., W. H.
Stephens-Adamson Mfg. Co.
Webster Mfg. Company.

BRICK.

Harrison-Walker Refractories Co.
Improved Equipment Co.

BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.
Kilbourne & Jacobs Mfg. Co.
Sackett Screen & Chute Co., H. B.

BUILDERS' SUPPLIES.

Sackett Screen & Chute Co., H. B.
Houston Bros. Co.

CEMENT BRICK MCHY.

Bartlett, C. O., & Snow Co.
Martin-Henry Brick Machine Mfg. Co.

CEMENT HYDRAULIC.

Carolina Portland Cement Co.
Fowler & Pay.

CEMENT MCHY.

Cummer, F. D., & Son Co.
Kent Mill Co.
Kramer Automatic Tamper Co.
Power & Mining Mch. Co.
Ruggles-Coles Eng. Co.
Smith & Co., F. L.
Traylor Engineering Co.

CEMENT, PORTLAND.

Allentown Portland Cement Co.
American Cement Co.
Alpha Portland Cement Co.
Atlas Portland Cement Co.
Atlantic and Gulf Portland Cement Co.
Carolina Portland Cement Co.
Chicago Portland Cement Co.
Coply Cement Mfg. Co.
De Smet, Geo. W.
Dexter Portland Cement Co.
French, Samuel H., & Co.
Hartman, Wm. G., Cement Co.
Kansas City Portland Cement Co.
Kirkpatrick Sand & Cement Co.
Ironton Portland Cement Co.
Lehigh Portland Cement Co.
Marquette Cement Mfg. Co.
Meacham & Wright Co.
Maryland Portland Cement Co.
Northwestern States Portland Cement Co.
Phoenix Portland Cement Co.
Sandusky Portland Cement Co.
St. Louis Portland Cement Works.
Security Cement & Lime Co.
Southwestern States Portland Cement Co.
Standard Portland Cement Co.
Superior Portland Cement Co.
Vulcanite Portland Cement Co.
Union Sand & Material Co.
Universal Portland Cement Co.
Wolverine Portland Cement Co.
Woodville Lime & Cement Co.

CLAY PRODUCTS.

Buckeye Fire-Clay Co.
Harrison-Walker Refractories Co.
Improved Equipment Co.

CLAYWORKING MCHY.

American Clay Working Mch. Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.

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Century Cement Mch. Co.
Chicago Structural Tile Co.
Concrete Stone & Sand Co.
Francis Machinery Co.
Gearless Company.
Marsh Co.
Perfection Block Mch. Co.
Peerless Brick Machine Co.
Pettyjohn, The, Co.
Sioux City Cement Mch. Co.

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Cement Tile Mch. Co.
Chalmers & Williams.
Kent Mach. Co.
Marsh Co.
Ohio Ceramic Engineering Co.
Standard Scale & Supply Co.
Williams Contractors' Supply Co.

CONCRETE BEADS.

Carolina Portland Cement Co.

COLORINGS, BRICK AND MORTAR

Chattanooga Paint Co.
Clinton Metallic Paint Co.
Macneal, James B., & Co.
Ricketson Mineral Paint Works.
Williams, C. K., & Co.

CONCRETE REINFORCEMENTS.

American Steel & Wire Co.
Buffalo Wire Works Co.

CONVEYORS.

Austin Mfg. Co.
Bartlett, C. O., & Snow Co.
Caldwell, H. W., & Sons Co.
Ersham, J. B., & Sons Mfg. Co.
Power & Mining Mch. Co.
Sackett Screen & Chute Co., H. B.
Stephens-Adamson Mfg. Co.
Traylor Engineering Co.
Webster Mfg. Company.

CRUSHERS.

Allen Edgar American Manganese Steel Co.
Austin Mfg. Co.
Bacon, Earl C.
Bartlett, C. O., & Snow Co.
Butterworth & Lowe.
Chalmers & Williams.
Chrome Steel Works.
Ersham, J. B., & Sons Mfg. Co.
Gardner Crusher Co.
Eureka Stone & Ore Crusher Co.
Good Roads Machinery Co.
Lowistown Foundry & Machine Co.
Kent Mill Co.
Marsh Co.
Martin, Henry.
McDonnell Boiler & Iron Works.
Pennsylvania Crusher Co.
Power & Mining Mch. Co.
Smith, T. L., & Co.
Symons Brothers.
Sturtevant Mill Co.
Taylor Iron & Steel Co.
Traylor Engineering Co.
Williams Contractors' Supply Co.
Williams Pat. Crusher & Pulverizer Co.

CUT GEARS.

Nuttall, R. D., Co.

DERRICKS (BUILDERS).

Sasgen Bros.

DRILLS.

American Well Works, The.
Cyclone Quarry Drill Co.
Keystone Traction Drill Co
Howell Mining Drill Co.

DRYERS.

American Process Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.
Power & Mining Machinery Co.
Ruggles-Coles Eng. Co.
Traylor Engineering Co.
Worrell, S. E.

DRYER CARS.

Kilbourne & Jacobs Mfg. Co.
Power Mining & Mch. Co.
Sackett Screen & Chute Co., H. B.

DUMP CARS.

Atlas Car & Mfg. Co.
Austin Mfg. Co.
Chase Foundry Mfg. Co.
Kilbourne & Jacobs Mfg. Co.
Ohio Ceramic Eng. Co.
Power & Mining Mch. Co.
Sackett Screen & Chute Co., H. B.
Stephens-Adamson Mfg. Co.

DUMP WAGONS.

Troy Wagon Works Co.

DYNALITE.

American Dynalite Company.

DYNAMITE AND POWDER.

Aetna Powder Co.
DuPont Powder Co.
Independent Powder Co.

ENGINEERS.

Bacon, Earl C.
Buckbee, J. C. Co.
Currie & McLaren.
Improved Equipment Co.
Schmitz, Ernest.
Spackman, Henry, Eng. Co.
Smith & Co., F. L.
Yates, Preston K.

FIBRE MCHY.

Shuart-Fuller Mfg. Co.

FIRE BRICK.

Buckeye Fire-Clay Co.
Carolina Portland Cement Co.
Harrison-Walker Refractories Co.
Improved Equipment Co.
Louisville Fire Brick Co.
Union Mining Co.

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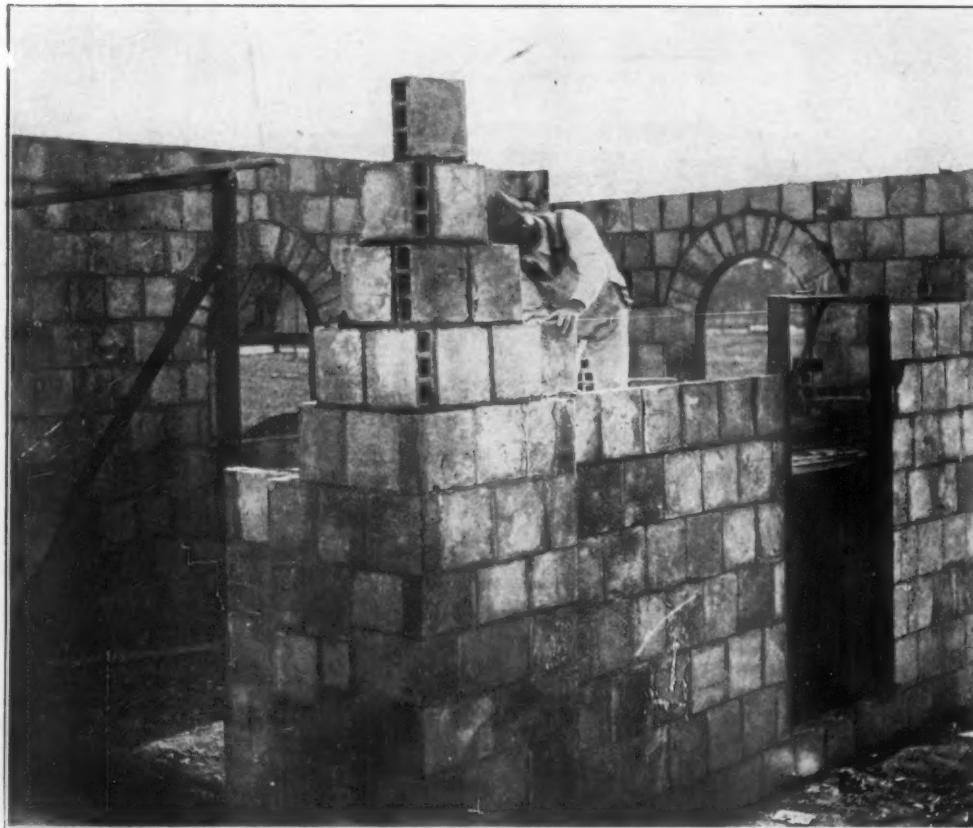
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**For Dwellings, Factories, Walls, Floors, Etc.
Incombustible and Economical**



Used in the New Terminal of the New York Central Railroad in New York to Carry Expensive Art Plaster Work

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Why the Buyer of Amatite Never Complains

When a man buys ordinary ready roofing he usually neglects to paint it and after three or four years he comes back to the dealer with a protest. It is human nature to neglect painting roofs.

When a man buys Amatite Roofing he lays it on his building and in three or four years it is still as good as new and does not need any paint. He forgets he has such a roof but no harm is done by that.

There is nothing to neglect in the case of Amatite. Amatite has a peculiar surface—a sort of plastic concrete made of pitch and mineral matter.

This surface is plastic enough so that the material can be rolled up into handy rolls in the usual manner and handled just like any other ready roofing. When unrolled on the roof and nailed down it presents to the weather a continuous surface of mineral matter and pitch. On this surface wind, rain, storm, heat and cold have little effect. Year after year it looks up to the sky undisturbed and unaffected. It costs nothing to maintain and relieves the owner from all responsibility.

Dealers can improve their business by selling Amatite and buyers make a good bargain when they buy it. The price of Amatite is less than that of most painted roofings of less weight and durability.

Sample free on request.

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THE LATEST IN Builders' Derricks

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Ready for Work
with 110 ft.
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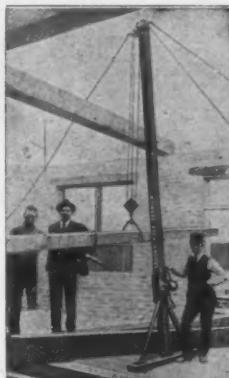
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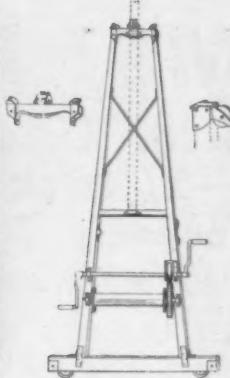
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18 ft. Pole Derrick, complete as above shown, except guy lines, including rollers..... \$26.50



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18 ft. "A" Frame Derrick, complete as shown above, ready for hoisting... With geared winch for 1½-ton capacity..... \$45.00
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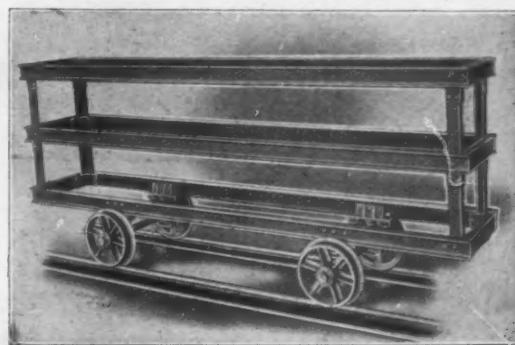
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"You fill the Hopper, the Mixer does the rest"

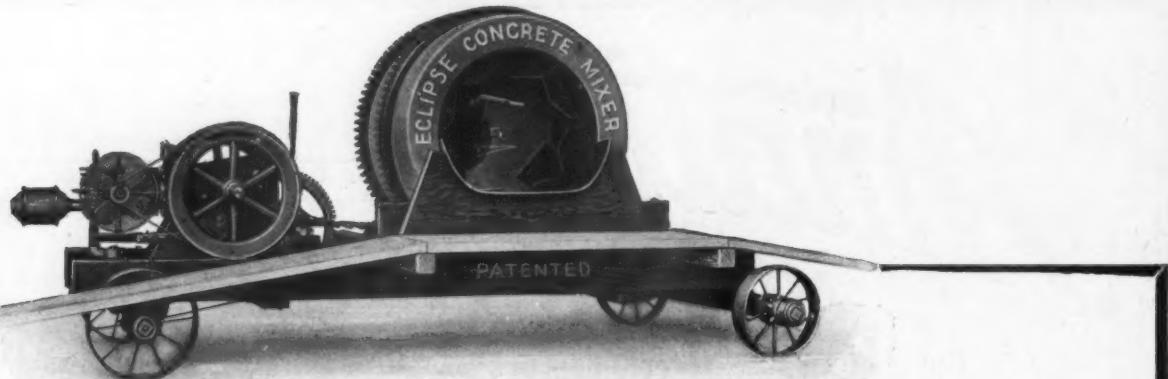
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The Kent Machine Co.
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The "KENT" Block Cars, Transfer Cars, etc.



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It is not alone the saving of $\frac{1}{2}$ in first cost, $\frac{1}{2}$ in power, one man to operate the hoist and $\frac{1}{2}$ the delays and repairs, but the greater portability enabling it to always be kept at the most convenient position on the job for rapid work that are the distinguishing features of the

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And we offer our patrons not only greater economy of operation but unequalled service in shipment. We carry 100 Eclipse Mixers in stock at our factory, stores, warehouses and branch houses for immediate shipment.

It is pre-eminently the mixer for the contractor because it saves money in nearly every possible use.

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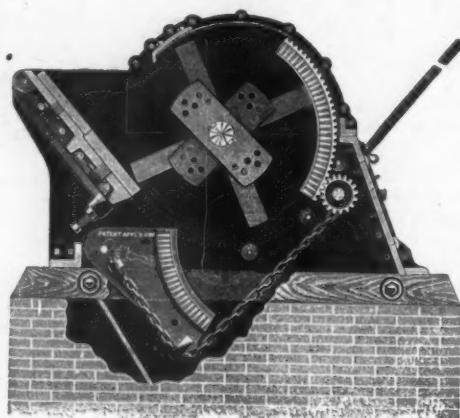
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Will take 6 in. Limestone or Shale and reduce to 2 inch,— $1\frac{1}{2}$ inch,—1 inch,— $\frac{3}{4}$ inch and finer.
1 No. 6 Recently Replaced 3 No. 5 Gyratories.

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Iola, Kansas, December 6th, 1910
Williams Patent Crusher & Pulverizer Co., St. Louis, Mo.

Gentlemen: Your No. 6 Jumbo Crusher recently installed by us is handling about 100 tons per hour of crushed limestone from a No. 8 Gyratory Crusher, the largest pieces of which will average six inch cubes.

The capacity of our elevator is 115 tons per hour and the machine easily overloads* the elevator. We are now installing an elevator of double the CAPACITY FOR THIS CRUSHER. Your guarantee was fifty tons per hour from this machine.

Your crusher reduces all of our material to three-quarter inches and finer and the majority to one-quarter inch.

We have been operating the machine about eight weeks and find same most satisfactory.

Yours very truly, THE IOLA PORTLAND CEMENT CO., F. L. WOODS, Supt.

MADE IN 8 SIZES—ALL PARTS ADJUSTABLE

Ask Iola Portland Cement Co., Texas Portland Cement Co., Southwestern Portland Cement Company,—or us. Write for Bulletin 12.

WE ALSO MAKE LIMESTONE GRINDERS

**THE WILLIAMS PATENT CRUSHER
& PULVERIZER COMPANY**
OLD COLONY BL'DG.—CHICAGO

NOTICE TO THE PUBLIC

The U. S. Circuit Court of Appeals at Philadelphia rendered its final decision in the suit that we brought against the Pennsylvania Crusher Company some time ago for infringement of our Patent No. 843,729, for improvements in Dumping Cages for Crushers and Pulverizers. This decision of the Court of Appeals handed down in the March term 1911, concludes, "the record will be remanded with instructions to the Circuit Court to enter a decree reversing the former one adjudging claims 1 and 2 of the patent in suit to be valid and infringed, and awarding to the complainant an injunction with the usual accounting and costs of suit."

Under the law, a user of an infringing machine is liable for his acts of infringements. The maker and seller of the infringing machine in question has been found to have infringed our patent No. 843,729, and the Court of Appeals, in addition, has found the infringed claims of said patent to be valid.

It is our intention to protect our rights as secured to us by the above patent and numerous other patents which have been granted on improvements we have made in crushing and pulverizing machinery, and the public is warned against buying crushing and pulverizing machines which infringe any of the following patents:

No. 428,048.....	May 13, 1890	No. 803,133.....	Dec. 26, 1905	No. 878,921.....	Feb. 11, 1908
No. 544,336.....	Aug. 13, 1895	No. 808,133.....	Dec. 26, 1905	No. 878,921.....	Feb. 11, 1908
No. 11,634.....	Oct. 28, 1897	No. 811,679.....	Feb. 6, 1906	No. 878,921.....	Feb. 11, 1908
No. 589,236.....	Aug. 31, 1897	No. 813,190.....	Feb. 20, 1906	No. 904,907.....	Nov. 24, 1908
No. 589,236*.....	Aug. 31, 1897	No. 815,087.....	Mar. 13, 1906	No. 904,908.....	Nov. 24, 1908
No. 590,748.....	Sept. 28, 1897	No. 815,087.....	Mar. 13, 1906	No. 904,909.....	Nov. 24, 1908
No. 590,748.....	Sept. 28, 1897	No. 818,328.....	Apr. 17, 1906	No. 906,346.....	Dec. 8, 1908
No. 604,485.....	May 24, 1898	No. 818,725.....	Apr. 24, 1906	No. 938,656.....	Nov. 2, 1909
No. 604,485.....	May 24, 1898	No. 836,161.....	Nov. 20, 1906	No. 938,656.....	Nov. 2, 1909
No. 604,485.....	May 24, 1898	No. 836,162.....	Nov. 20, 1906	No. 938,657.....	Nov. 2, 1909
No. 646,249.....	Mar. 27, 1900	No. 836,162.....	Nov. 20, 1906	No. 938,657.....	Nov. 2, 1909
No. 646,250.....	Mar. 27, 1900	No. 836,163.....	Nov. 20, 1906	No. 938,734.....	Nov. 2, 1909
No. 646,278.....	Mar. 27, 1900	No. 836,422.....	Nov. 20, 1906	No. 938,734.....	Nov. 2, 1909
No. 657,998.....	Sept. 18, 1900	No. 843,729.....	Feb. 12, 1907	No. 938,734.....	Nov. 2, 1909
No. 35,211.....	Oct. 22, 1901	No. 845,171.....	Feb. 26, 1907	No. 939,769.....	Nov. 9, 1909
No. 711,688.....	Oct. 21, 1902	No. 850,988.....	Apr. 23, 1907	No. 939,770.....	Nov. 9, 1909
No. 726,602.....	Apr. 28, 1903	No. 851,390.....	Apr. 23, 1907	No. 939,771.....	Nov. 9, 1909
No. 728,643.....	May 19, 1903	No. 12,659.....	June 4, 1907	No. 939,772.....	Nov. 9, 1909
No. 728,643.....	May 19, 1903	No. 12,659.....	June 4, 1907	No. 939,773.....	Nov. 9, 1909
No. 730,503.....	June 9, 1903	No. 12,659.....	June 4, 1907	No. 939,774.....	Nov. 9, 1909
No. 738,507.....	Sept. 8, 1903	No. 858,772.....	July 24, 1907	No. 939,775.....	Nov. 9, 1909
No. 741,947.....	Oct. 20, 1903	No. 877,689.....	Jan. 28, 1908	No. 939,776.....	Nov. 9, 1909
No. 741,947.....	Oct. 20, 1903	No. 877,689.....	Jan. 28, 1908	No. 939,777.....	Nov. 9, 1909
No. 957,705.....	Apr. 19, 1904	No. 877,689.....	Jan. 28, 1908	No. 939,778.....	Nov. 9, 1909
No. 758,288.....	Apr. 26, 1904	No. 877,690.....	Jan. 28, 1908	No. 940,827.....	Nov. 23, 1909
No. 758,288.....	Apr. 26, 1904	No. 877,690.....	Jan. 28, 1908	No. 944,780.....	Dec. 28, 1909
No. 758,288.....	Apr. 26, 1904	No. 877,876.....	Jan. 28, 1908	No. 944,780.....	Dec. 28, 1909
No. 792,485.....	June 13, 1905	No. 878,847.....	Feb. 11, 1908	No. 944,780.....	Dec. 28, 1909
No. 806,383.....	Dec. 5, 1905	No. 878,921.....	Feb. 11, 1908	No. 953,111.....	Mar. 29, 1910

"Manufactured and Licensed Under 87 Separate and Distinct Patents."

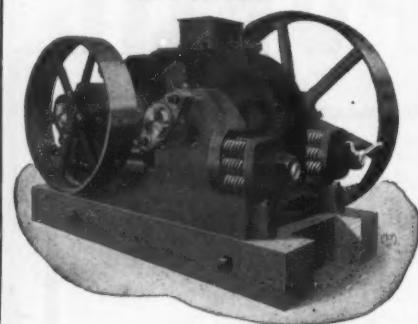
THE WILLIAMS PATENT CRUSHER & PULVERIZER CO.

CHICAGO, Old Colony Building

Works: ST. LOUIS, MO., 2701 North Broadway

SAN FRANCISCO, 428 Monadnock Building

Crushing Rolls



Will
Pulverize

Are You Prepared For This?

[Extract from "Rock Products" March issue.]

Because of lectures and instruction given by the Agricultural Experiment Stations in Illinois, on the use of limestone dust as a fertilizer, the authorities of the stations believe that in 1911 the demand in this state alone will be for 100,000 tons of dust, or over 2,000 car loads. In the year 1910 450 car loads of dust were shipped from the crushing plant at the Southern Illinois penitentiary at Chester alone. Men connected with the prison industry still agree that the private firms cannot at present compete with the present price of 60 cents per ton on board cars at the prison. They have no doubt that the industry will become so extensive that it cannot be handled by the prisons and that the state will discontinue the manufacture and leave the industry to private capital.

Ask for Catalog D 4.

Chalmers & Williams, Chicago Heights, Illinois

NEW YORK OFFICE—SINGER BUILDING.

GOOD ROADS CONSTRUCTION CO.

General Offices, Byrd Bldg., Memphis, Tenn.

Our Quarry Facilities are of the Best.

We build municipal street work, turnpikes and give attention to all construction work of a similar character. Our organization is backed by twenty-five years experience, and we are in a position to furnish specifications and estimates promptly. Individuals, Corporations or Municipal authorities are invited to correspond with us.

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SPECIALISTS IN

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FARREL ORE AND ROCK CRUSHER

USED IN ALL PARTS OF THE WORLD—LARGE RECEIVING CAPACITY—SPECIALLY DESIGNED AND CONSTRUCTED FOR HARDEST KIND OF WORK

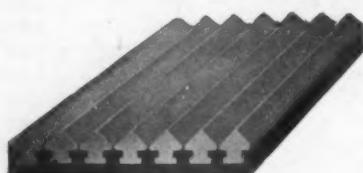
COMPLETE CRUSHING PLANTS OUR SPECIALTY

• SEND FOR CATALOGUE •

EARLE C. BACON, ENGINEER.

FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

A Tempered Steel Jaw Plate for Blake Type Crushers



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers. The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc. Our products in this line are sold with our special guarantee that they *will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.*

—Send for Descriptive Pamphlet—

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AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

Plans and specifications furnished for any sized plant.

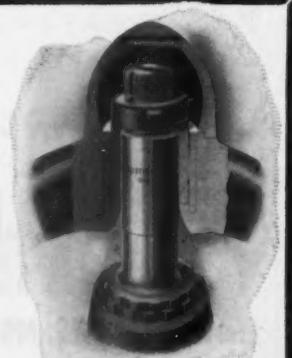
Send for Catalogue No. 17.

All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.

Austin Manufacturing Co., Chicago
Mussens Ltd., Montreal, Can., Canadian Sales Agents.



New York City Office
1682 FULTON BUILDING
Hudson Terminal

Tell 'em you saw it in ROCK PRODUCTS

The Gardner Crusher Disintegrator and Pulverizer

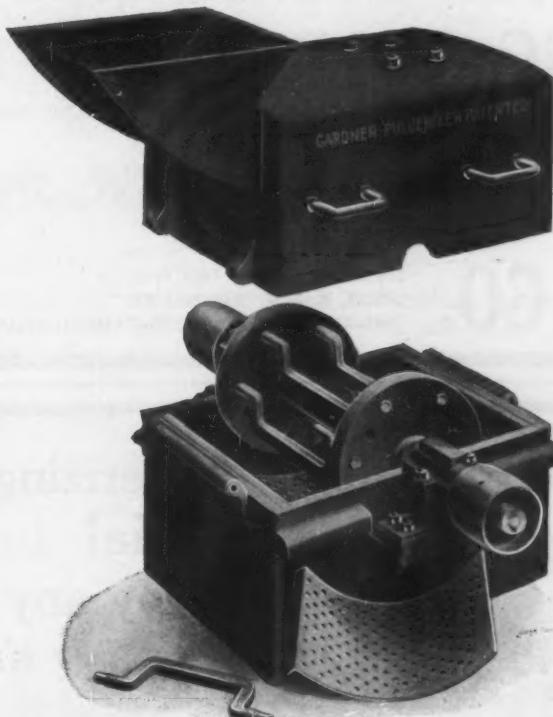
The great advantages of our CRUSHER are the following:

High Productivity	Low Motive Power
Small Space Occupied	Strong Construction
Nominal Wear	Any Desired Fineness
Moderate Prices	

**The Gardner Crusher
Disintegrator
and
Pulverizer**

is adapted for

**Cement, Plaster,
Quartz, Pyrites, Lime,
Pozzolana Earth,
Blast Furnace
Cinders,
Calcareous Stones,
Porphyry, Granite,
Emory, Corundum,
Saggar from
Potteries,
Scoria, Hammerslag,
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Foundry Sand,
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AN IDEAL PREPARATOR FOR THE TUBE MILL.

— TRIALS —

In order to give every facility to our customers, we have installed a Crusher for trials at our plant at 532 West 34th Street, New York City. You have only to send us a sample of your crude material and a sample of what you require when crushed. You should also specify the quantity that you desire per hour.

Our experienced engineer is at your disposal for any further explanation. *Send For Catalogue.*

**The Gardner Crusher
Disintegrator
and
Pulverizer**

has these advantages:

Is the most economical of all Crushers or Pulverizers.

Its price is very moderate.

Its capacity for pulverizing is enormous compared to its size and power required.

The *Gardner Crusher* requires no special foundations and can be put up anywhere.

Any fineness required can be obtained by merely changing the screens.

Its weight is very light, so the crusher can be sent to any remote country.

With the *Gardner Crusher*, in some cases, the complete equipment of a crushing plant will be the *Gardner Crusher* and the tube mill. With this kind of an installation the larger machines No. 2 or No. 3 would be used, eliminating the preliminary breaking machines.

GARDNER CRUSHER CO.

532 WEST 34th STREET

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MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT
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We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

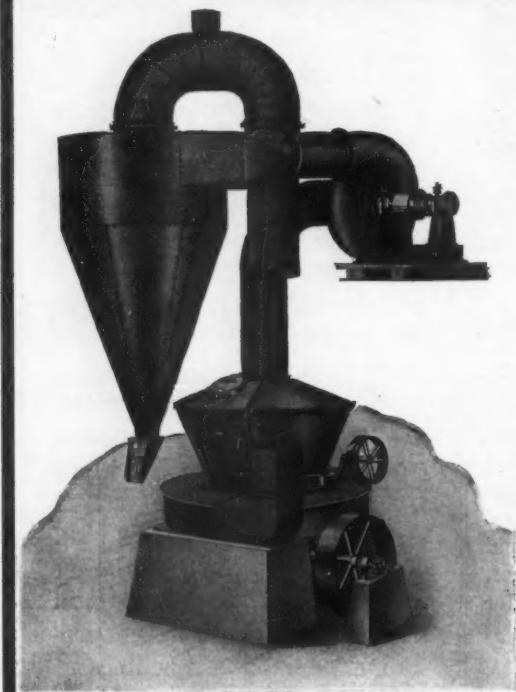
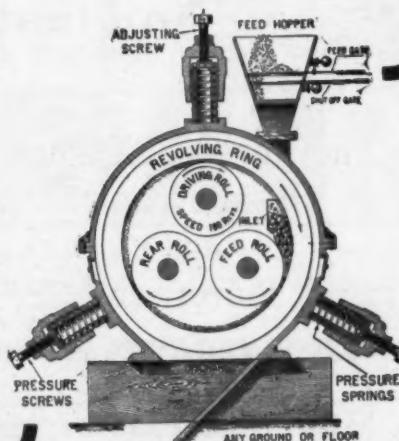
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The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

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**These Pulverizing Mills Grind
any material to a fineness
impossible by any other process
—yet are the simplest of all**

The Raymond Pulverizing, Air Separating and Conveying System accomplishes what has never been done before and is not now done by any other known process. It not only grinds any material to the finest possible mesh, but it automatically and instantly separates the pulverized material and conveys it to the point of storage while the grinders are still in operation.

RAYMOND Pulverizing
Air Separating
and Conveying **SYSTEMS**

do even more. They save money, power, labor, time, space, material, cost of upkeep, and at the same time increase the general efficiency of men and machinery. Every pulverized atom is confined within the mill, is saved and delivered to where you want it. No dust escapes to choke and poison workmen in the grinding room.

Raymond Pulverizing Systems are designed by our Engineering Specialists who fit them to conditions existing in your plant. They are installed with our absolute guarantee that they will do the service we claim and that you require or the sale is not made.

Send for our Book No. 7 which explains in detail what our system is and how and where it may be used.
Read this book and you may find the way to divert some items from the expense account into the dividend account.

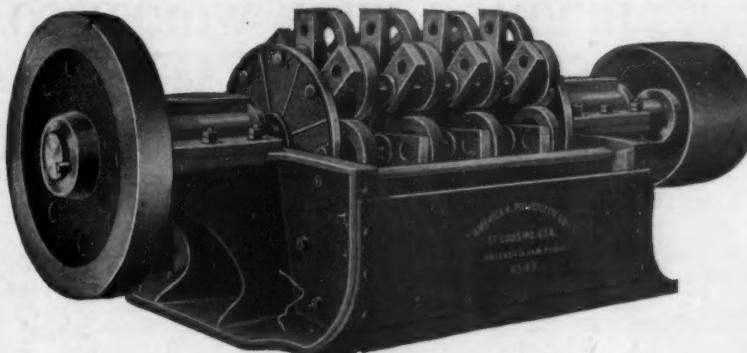
RAYMOND BROTHERS IMPACT PULVERIZING COMPANY
526 Laflin Street

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Chicago, Illinois

**PLEASE CUT THIS OUT —
REMINDER**

To write Raymond Brothers Impact Pulverizer Company, 526 Laflin St., Chicago, for their Book No. 7 on Modern Methods of Pulverization and Air Separation.



MADE IN SIX SIZES

Our Advertisements Have Told You the Names
of Users of Our

American Ring Pulverizer

and of the Dry Pans, Hammer-Mills, Cone Mills,
Roll Disintegrators and Other Types of Mills that
they have discarded, declaring the superiority of the

American Ring Pulverizer

It does its work with less cost of operation, does more and better work, withstands more rugged work
and is doing work other types of mills cannot do.

Slow Speed---THE RING IS THE WHY---Low Power

All Grinding Parts made of Manganese Steel. Those who Investigate invariably Buy

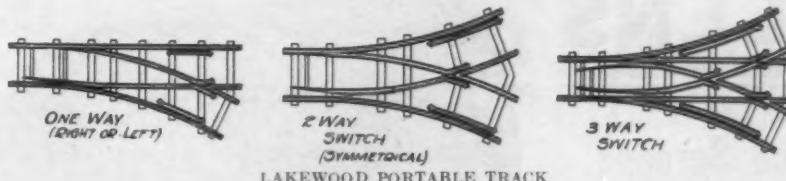
We maintain a Testing Plant. Send Sample, freight prepaid, and we will pulverize it free. Better yet,
come and see it pulverized. Written guarantee with each Machine. 30 days' test at your Works.

SEND FOR CIRCULARS AND INFORMATION

American Pulverizer Company

410 Jaccard Building

St. Louis, Missouri



Lakewood Line



Right handling of material means large economies—
sometimes the difference between profit and loss. If you consult catalogue of the
Lakewood Line you may find what will solve your problem. Our experience in labor saving is at your disposal.



Lakewood Concrete Cart.



Lakewood
"Radialgate" Hopper.
Car No. 232.



Lakewood
"Floor" Hopper.

The Ohio Ceramic Eng. Company Cleveland

Branch: 1015 First National Bank Bldg.
Chicago

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TISCO

Tisco Manganese Steel

is the most economical material for all places on
Revolving Screens
 where wear is most severe

Does your banker use a TISCO Manganese Steel Safe?

Taylor Iron & Steel Co.
 High Bridge, New Jersey



Dull's Improved Conical Screen
 WE DESIGN AND CONSTRUCT COMPLETE
 SAND AND GRAVEL WASHING PLANTS
 We invite correspondence—Send us full particulars

RAYMOND W. DULL & COMPANY
 AURORA, ILL.

BUFFALO WIRE WORKS CO.

BUFFALO, N. Y.

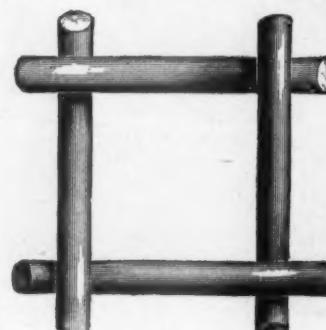
We make

Wire Cloth

From the coarsest to the
 finest, for all purposes,
 Also

WIRE CONCRETE REIN-
 FORCEMENT, WIRE
 WORK of all kinds,
 CORRUGATED WIRE
 "LATHING"

Send for Our No. 416 Catalogue.



Whenever you wish to

SELL YOUR STOCK, to
 DISPOSE OF YOUR
 OLD MACHINERY,
 WISH AN EMPLOYEE, or
 WANT A POSITION,

REMEMBER

that ROCK PRODUCTS can do this
 for you promptly.

SCREENS

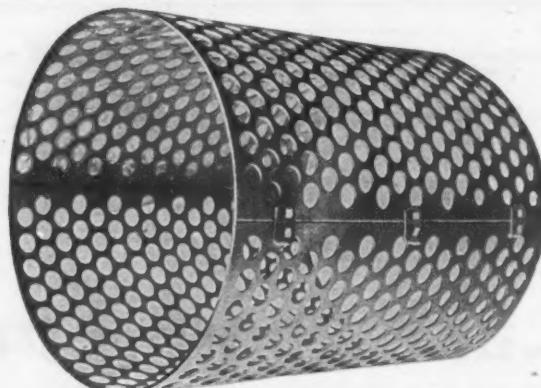
If you are interested in

Perforated Screens
 and

**Have Tried All the Rest,
 Why Not Try the Best?**

Let us supply you with our screens, which
 are made from a special Hard Steel,
 especially adapted for stone, ore, gravel,
 sand, etc.

We Solicit
 Your Inquiries



BECKLEY PERFORATING CO., Garwood, N. J.

IT WILL PAY YOU TO INVESTIGATE

**PRICE, MATERIAL and
 DELIVERIES Are Right**

Revolving Screens, Suspension Screens
 Trunion Screens, Shaker Screens
 Hexagonal Screens, Jump Screens

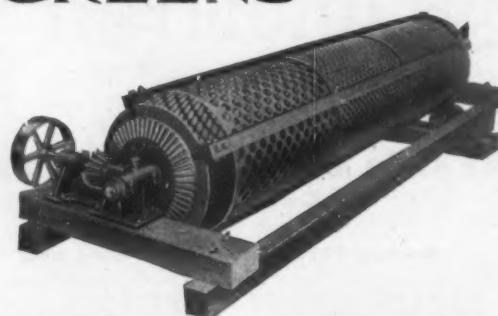
If you don't see the screen you are
 looking for here, ask for it. We make it.

Send for
 Circular

CARS — SCREENS — ELEVATORS



Buckets
 Stone
 Skips



Switches
 Hoists
 Portable
 Track



If you are "from Missouri" or anywhere else
 "We can show you."

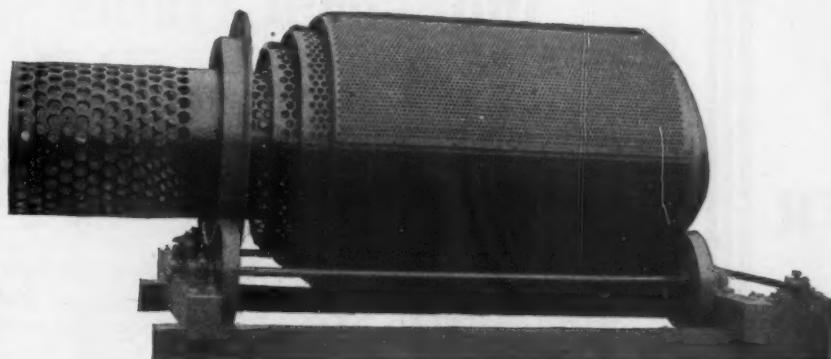
"SACKEFF" { High Quality
 Low Price
 Prompt Delivery

1679 ELSTON AVENUE

SACKEFF---CHICAGO

Tell 'em you saw it in ROCK PRODUCTS

JOHN O'LAUGHLIN'S SCREEN



The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

made solely by Johnston & Chapman, is the

ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

NOW

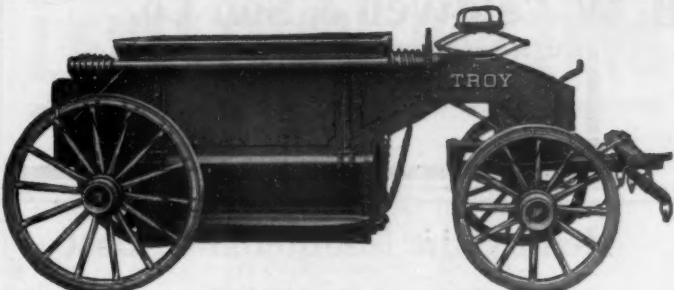
will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

JOHNSTON & CHAPMAN CO.

Corner Francisco and Carroll Ave., Chicago, Ill.

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

CHUCKLES LIKE A CIRCUS WAGON



The TROY Special

The Lightest-running Dump Wagon Ever Built.

A short-coupled 8 ft. 4 in. wheel base **Troy** Dump Wagon. Weight only 1890 lbs.—this with the short couple makes it a God send for your horses.

Low down—4 ft. 8½ in. high. Easy to shovel into. 6500 lbs. capacity—strong enough for steam shovel work.

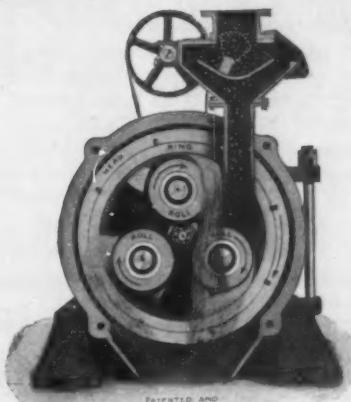
The wagon you have been looking for—low, light-running, sturdy. You can use lighter teams and cut your investment. Meets all the needs of the contractor. Works equally well with hand shovels, road excavators or steam shovels.

The price will astonish you—get it. Ask for catalog 2 P.

THE TROY WAGON WORKS COMPANY
101 East Race St., Troy, O.

Tell 'em you saw it in ROCK PRODUCTS

Sturtevant Ring-Roll Pulverizer



For Coarse or Fine Grinding

No Fans, Plows, Scrapers, Pushers, Shields or Screens, to wear out and take unnecessary power.

Only Four Wearing Parts — (Ring and 3 Rolls.)

Replacing these make an old mill new. These wear from 6 to 18 months

Submit your Crushing and Grinding problems to us — We make many kinds of Crushers, Rolls, Pulverizers and Screens

SEND FOR CATALOGUE

Sturtevant Mill Co., Boston, Mass.

**A Contract to Crush
Mountains at 27c a Ton**

would be easy for a

**Mitchell
Improved
Crusher**



Here is a steel machine—built for the lime plant or quarry—for crushing 6 in. material to pass a 1-2 in. ring. Jaw opening, 7 in. by 18 in.—weight 5000 lbs. Requires 15 H.P. Capacity, 5 to 7 tons an hour.

A CONTRACT TO CRUSH MOUNTAINS AT 27c A TON
would be easy for a Mitchell Improved Crusher.

That is what it actually costs most users of this crusher under ordinary conditions.

We would like to take the job of crushing Mt. Shasta at 27c a ton, railroad weights. We would be able to hand the next generation a fat bank account and a job that would keep them out of politics.

The claims we make for the Mitchell Improved Crusher come from our customers. Take their word for what a Mitchell Crusher will do for you.

You can get a crusher in any size, with a capacity as small as 10 tons per day or as much as 300 tons. What's more you can get all your product with this machine as fine as sand or as coarse as 3". The adjustment is accomplished by merely turning a hand wheel.

We have just printed a 60 page catalog describing this machine. Drop us a card, stating what you have to crush, to how many sizes you want to reduce the material, and what capacity you can use in a 10 hour day.

You will be surprised at the low cost of such a machine as you need.

**Eureka Stone and Ore
Crusher Co.**

CEDAR RAPIDS

IOWA

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MACHINERY

Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material. Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalog No. 34

H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St.
NEW YORK CITY

Reduce the Maintenance Cost



of your machinery
by installing Nuttall Cut or
Planed Gears. Send in
Your Specifications. We
will Submit a Proposition
that will Interest You.

Nuttall - Pittsburg

When in a hurry, wire us.



Lewistown Foundry & Machine Co.

LEWISTOWN, PA.

Builders of heavy duty crushers and glass sand machinery. Glass sand plants equipped complete.

WRITE FOR PRICES AND CATALOG.

WEBSTER ELEVATING & CONVEYING MACHINERY

FOR SAND, GRAVEL
AND CRUSHED STONE PLANTS



Belt Conveyors
Continuous Bucket Elevators
Revolving Screens for Sand and Gravel
Open Top Carriers

THE WEBSTER M'F'G COMPANY

ENGINEERS, FOUNDERS AND MACHINISTS
Eastern Branch
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LEVIATHAN BELTING

is to be found in use
in practically every
important stone
crushing and sand
and gravel plant of
the United States, and
on sale by

MAIN BELTING CO.

PHILADELPHIA CHICAGO NEW YORK BOSTON
PITTSBURG MONTREAL SEATTLE

"You can do without LEVIATHAN, but you
cannot do so well."



EVERY INCH
THOROUGHLY
SEASONED
CANNOT
STRETCH

THE GANDY BELT

EVERY DAY WE RECEIVE ORDERS FOR

GANDY STITCHED COTTON DUCK BELTING

in which the customer specifies immediate shipment, and also that the belt must be one which has been seasoned for a certain time—six months—or even more.

Now every Gandy Belt as soon as completed is thoroughly stretched on our special patented stretching machines, and then placed in stock to become "seasoned".

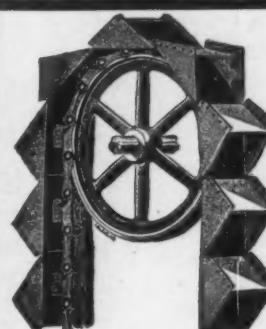
This stock we keep so large and complete at all times that it is never necessary for us to ship a belt which has not been seasoned at least several months or more.

This stretching and seasoning absolutely eliminate any possibility of the Gandy Belt stretching after being put in service.

And besides this one advantage, the Gandy Belt is the most durable and economical belt for Driving, Elevating and Conveying. One third the cost of leather and twenty-five per cent cheaper than rubber.

Write for our free booklet, containing letters from Gandy users in every industry. Just drop us a postal to-day.

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744 W. PRATT ST. BALTIMORE, MD.
New York Office—88-90 READE ST.



Send for Catalog 25



THE GENERAL CRUSHED
STONE CO.,
So. Bethlehem, Pennsylvania,
have been using one of our Common Sense Elevators for six years—
capacity 400 tons an hour.

THE C. O. BARTLETT & SNOW CO. CLEVELAND,
OHIO

"R. F. & C." Solid Woven Rubber Belt

Eliminates every rubber belt defect. Send for pamphlet
"A Wireless On Rubber Belting."

W. H. SALISBURY & CO., Dept. R
CHICAGO Established 1855 ILLINOIS

WRITE
HOUSTON BROS. COMPANY PITTSBURG, PA.

[FOR ATTRACTIVE PRICES ON]

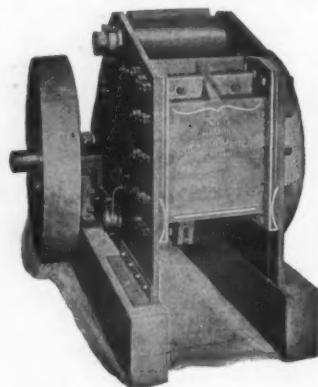
SEWER PIPE

BUILDING-BLOCK
PEARL HYDRATED LIME
ASPHALT READY ROOFINGS
ROOFING SLATE

CEMENTS AND
WATERPROOFING
COMPOUNDS
WALL TIES

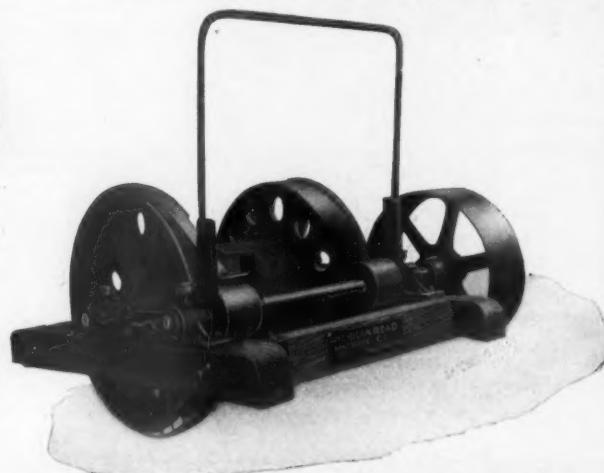
Increase the Output and Efficiency of Your Quarry

By using CHAMPION Rock Crushers, Elevators, Screens, Dump Cars, Hoisting Drums, Wire Cable, Conveyors, Bin Chutes, Engines and Boilers. Everything for the quarryman furnished at right prices. Our Dump Cars are Durable and Economical. Made in two sizes.



Champion Steel Rock Crushers are made in six sizes, from 75 to 600 tons daily capacity. We design and equip quarry plants of any capacity. Our Crushers do more work at less cost for repairs than any others. Catalog will interest you.

Count on quality when you consider Champion Quarry Machinery. We aim to furnish nothing but the best. Our winding drum is a low-priced, durable and economical appliance for drawing material from the quarry to the Crusher. Powerful and always to be depended upon.



The Good Roads Machinery Company, Kennett Square, Pa.

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Deep Blast Hole Drilling

Is accomplished more economically than by any other method with the
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There is 40 years' experience behind these drills—they are standard.
Where electric power is available, equipped with motor they form the most portable and economical drill for quarry use.

Equipped with any power they are backed by the experience and reputation of the world's oldest and largest builders of this kind of drilling machinery.

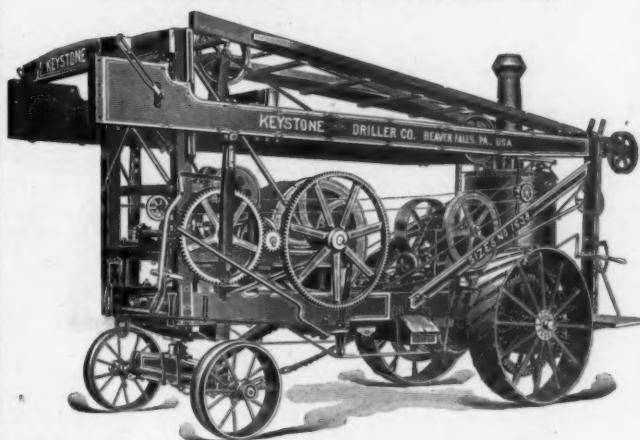
Tell us your blast hole requirements. We have 59 regular styles and sizes of machines for your selection, made in types to meet every possible condition of work.

Write for our new catalog No. 105, the most complete "Drill-Hole" catalog ever issued.

THE AMERICAN WELL WORKS

General Office and Works: AURORA, ILL., U. S. A. Chicago Office: First National Bank Building

For Big Blast Holes KEYSTONE CABLE DRILLS



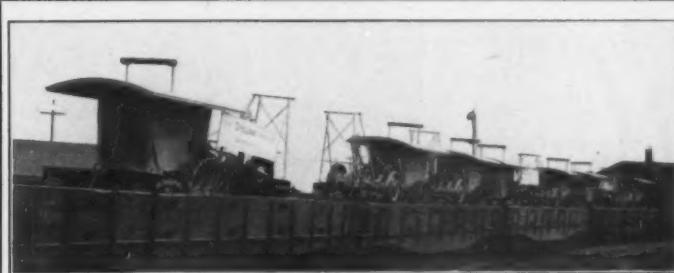
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Keystone Traction Drill Co.

Monadnock Bldg.,
CHICAGO

BEAVER FALLS, PA.,
170 Broadway, New York

CARTHAGE,
MISSOURI



Seven No. 14 Traction Drills.

THIS order was placed after trying out one of our drills for fourteen months in competition with seven machines of other makes; the seven other drills were discarded and Cyclones installed in their place.

If the Doles & Shepard Company of Chicago found it profitable to discard the other machines and buy Cyclones you can save more than half the expense by buying Cyclone drills right from the start.

Why spend money experimenting when the other fellow has done that? We guarantee to drill more holes at less expense than any other drilling machine on the market. If you want us to prove it, just ask our competitors to meet us in your quarry.

THE CYCLONE QUARRY DRILL COMPANY

New York Office, 50 Church St.
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ORRVILLE, OHIO

HOWELLS' Celebrated Ball Bearing Heavy Geared Post Drills

For boring anything that
an Auger will penetrate.

Awarded Gold Medal, St. Louis.



We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send today for our handsomely Illustrated Catalogue.

**HOWELLS MINING DRILL CO., PLYMOUTH, PA.
(ESTABLISHED 1878.) U. S. A.**

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INDUSTRIAL LOCOMOTIVES



American Locomotive Company's light locomotives meet every requirement of contracting, quarrying, mining and industrial service.

They are produced by men of skill and judgment in design, whose specialty is the building of locomotives for every kind of hauling. Back of the individual experience of these men is a record of over seventy-five years of continuous success in the locomotive building for railroads in every part of the world.

The small locomotives are of the same high grade as those built for the standard railroads. This high quality of material and workmanship insures long, continuous service. This means high earning capacity.

All the parts are made in jigs, so that they are absolutely interchangeable between engines of the same class. Duplicate parts are kept in stock at our works at Paterson, New Jersey, and in storehouses in Chicago and San Francisco.

Tell us your requirements, and we will give you a price on a locomotive exactly suited to your needs.

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET, NEW YORK

McCormick Building, Chicago
41 Ottawa Bank Building, Montreal, Canada

2101 Beaver Avenue, Pittsburg

N. B. Livermore & Co., Salt Lake City,

401 Board of Trade Building, Scranton

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Marion Shovels for Rock Excavation

These shovels have been thoroughly tested and proven in all kinds of cement and rock work. They handle this most efficiently and economically. Write us and find out for yourself just how they do this.



Our Revolving Shovels are most popular where the output is limited, and economy is a vital consideration. One man can operate them.

These shovels can be mounted on railroad or traction wheels. They are built in three sizes, with dipper capacities, respectively, of $\frac{1}{2}$ yd., $\frac{1}{4}$ yd., and $1\frac{1}{2}$ yd.

Ours is the largest plant in the world manufacturing Excavating Machinery exclusively.

Let us figure with you before you order that new steam shovel!

STEAM SHOVELS ELECTRIC SHOVELS REVOLVING SHOVELS DIPPER DREDGES SCRAPER BUCKET EXCAVATORS

SEND TODAY FOR CIRCULARS 65 AND 67.

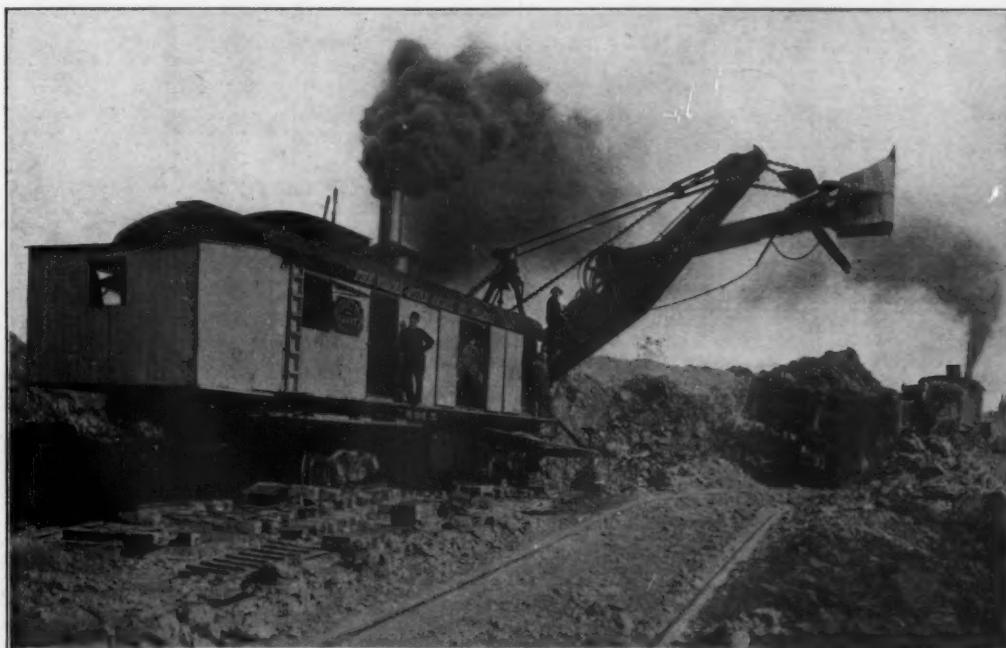
The Marion Steam Shovel Company, Marion, Ohio

Chicago: 1442-3 Monadnock Block.

New York: 50 Church St.

Montreal: F. H. Hopkins & Co.

VULCAN HEAVY-DUTY SHOVELS



CLASS "D" 85-TON STEAM SHOVEL OWNED BY J. C. CARLAND & CO., TOLEDO, OHIO

THE VULCAN STEAM SHOVEL CO., Toledo, Ohio

WILL DIG YOUR MATERIAL NO MATTER HOW HARD

In digging blasted and unblast-ed rock and all classes of heavy excavating they will stand up to the work and deliver the goods.

GIANT BOOM SHOVELS
45 to 120 Tons.

Also the Famous
LITTLE GIANT
32-Ton Shovel.

REVOLVING SHOVELS
Three Sizes, 15 to 40 Tons.
Traction Wheels or Railroad Trucks.

All Shovels Equipped for Steam or Electric Power.

Let Us Tell You About Them.

NEW YORK OFFICE:
50 Church Street



Points of Interest Concerning The Ehrsam Wood Fibre Machine

The log feeds itself to the saw. As the log decreases in diameter [the Speed of the log and of the feed INCREASES AUTOMATICALLY. In other words, the Peripheral Speed remains constant. The feed of the log to the saw is in direct proportion to the speed of the log. This automatic uniformity of feed INSURES UNIFORMITY of FINENESS in the PRODUCT.

No frictional devices are used, none being necessary. All the working parts are planed. All of the gears are cut from solid steel. All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position. The Saw mandril is extra heavy and made of the best crucible steel. The journals are chain oiling. No machine can be more substantially built. Write for full information.

Okeene, Okla., June 14, 1911.

J. B. Ehrsam & Sons, Enterprise, Kans.,

Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K.

Yours truly,

SOUTHWEST CEMENT PLASTER CO.,

Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens, Hair Pickers, Wood Fibre Machines, Calcining Kettles, Plaster Mixers, Power Transmission

The Enterprise Vertical Burr Mill

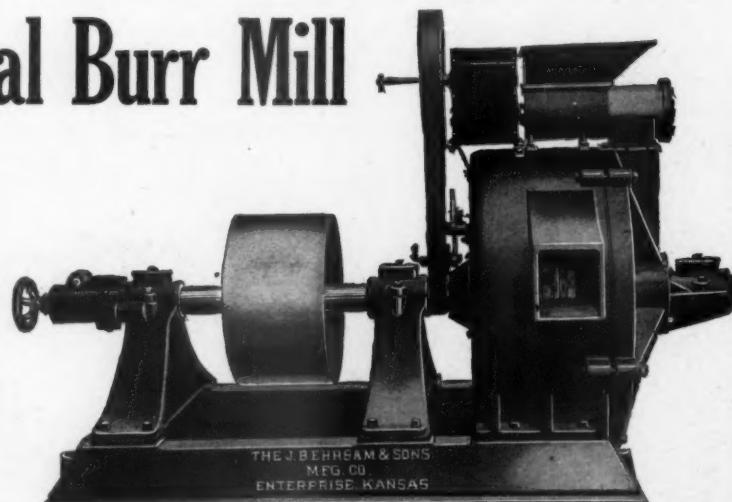
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is STRONG and DURABLY built.

Has INTERCHANGEABLE STONES, which can be easily removed for dressing and replaced.

Is provided with our POSITIVE CONTROLLABLE FEEDER, which feeds an absolutely uniform stream into the mill at the required capacity.

MANY OTHER
ADVANTAGES.



The J. B. Ehrsam & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

ENTERPRISE, KANSAS, U. S. A.

Cause & Effect

In this day of progress, in the race for Business and Profits, it's foolish to handicap your prospects—HANDLE THE BEST.

This, then, extends to you the use of a progressive organization, and the facilities of 37 Producing Mills, concentrating every effort on the production of the highest quality of Gypsum Products on the American Market.

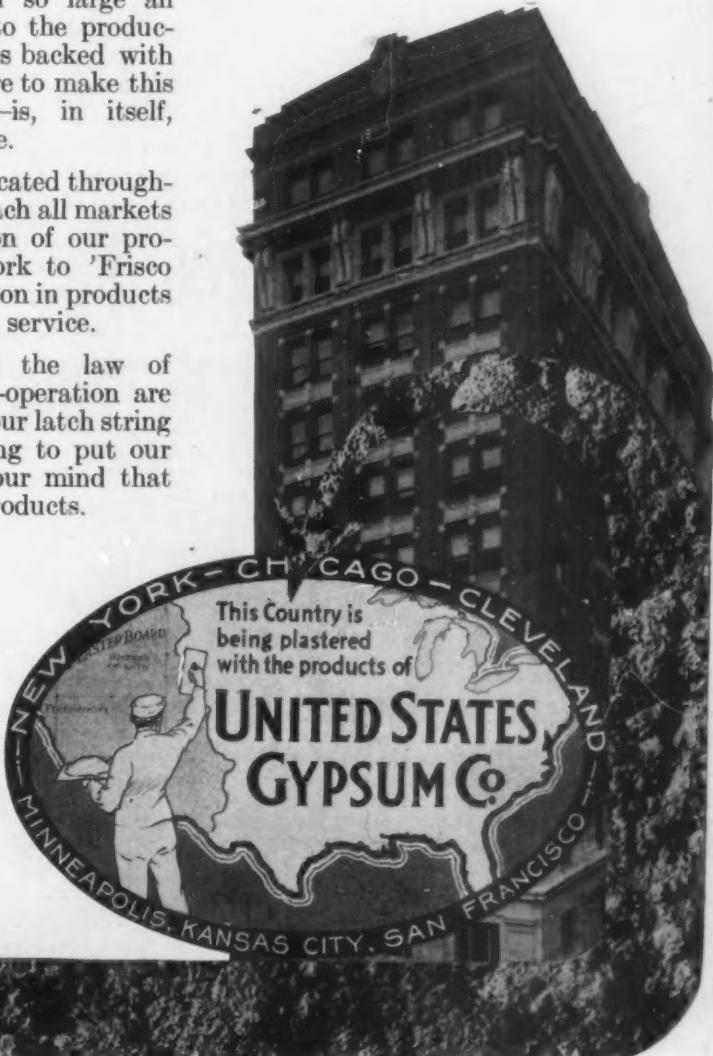
The fact that the energies of so large an organization are devoted entirely to the production of Gypsum Products—energies backed with ample ability and the earnest desire to make this line the very best of its kind—is, in itself, assurance of quality and excellence.

Our mills are advantageously located throughout the country, enabling us to reach all markets with an attractive and economical distribution of our products, and with sales offices from New York to 'Frisco places us in position to give you both perfection in products and perfection in intelligent co-operation and service.

The laws of success are as certain as the law of gravity—U. S. G. Products and U. S. G. Co-operation are trade winners in any market. If you keep your latch string always out for Greater Progress we are willing to put our time against yours in proving clearly to your mind that you can effectively use our service and our products.

**Gypsinite, a Plaster Fireproof Stud
Sackett Plaster Board
U. S. G. Hard Wall Plasters
" " " Finishes
Adamant Plasters, including Adamant 2-C—
the Perfection of Exterior Plaster.**

We stand ready to prove up. Let's get together—our interests are mutual.



Improved
Modern
Lath



Fire-Proof
Insulating
Sound-Deadening

King's Fibrous Plaster Board

Standard Size 32" x 36"

THE RESULT OF "TRADE DEMANDS"

STRENGTHENED to stand the GREATEST STRAIN to which such material is subjected
TOUGHENED to a woody consistency to stand NAILING AND HANDLING

SHIPMENTS made to dealers of STRAIGHT OR MIXED CAR LOADS

KING'S FIBROUS PLASTER BOARD

CALCINED PLASTER

MOULDING PLASTER

FINISHING PLASTER

WOOD FIBRE PLASTER

NEAT WALL PLASTER

SANDED PLASTER

MARBLE DUST

PLASTER BOARD NAILS

SERVICE The location of our works at the greatest railroad terminus in the East and our several warehouses enable us to make **Prompt** Shipments at all times.

J. B. KING & CO.

Plaster Board Department:
17 State Street, New York, N. Y.

WAREHOUSES:

Boston, Mass.	Providence, R. I.
Chester, Pa.	Hartford, Conn.
Norfolk, Va.	Buffalo, N. Y.
	Brunswick, Ga.

WORKS:

New Brighton, Staten Island,
NEW YORK

Dakota Plaster Co.



WE MAKE THE FAMOUS

"Black Hawk"

AND

"Dacotah"**Hair and Wood Fibred Plaster**

Our Plaster is pure white; uniform in color; carries more sand, works easier and makes the hardest wall. Our Mill is thoroughly equipped with the most modern machinery, and we are always in a position to make prompt shipment. We guarantee every sack of our plaster.

Dakota Plaster Co. Rapid City, S. D.
Black Hawk, S. D.

CUMMER CONTINUOUS PROCESS

FOR

CALCINING GYPSUM

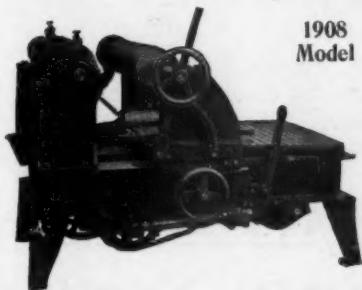
PLANTS IN OPERATION

NO KETTLES USED

Great Saving in Cost of Manufacture and Quality of Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

The Shuart-Fuller Improved Fiber Machine



1908 Model

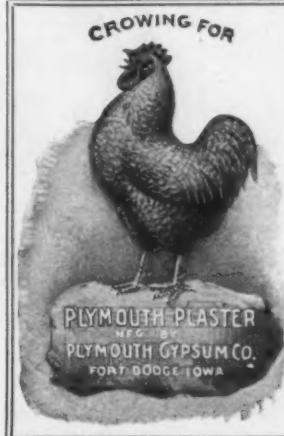
Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

The Shuart-Fuller Mfg. Co.
ELYRIA, OHIO

St. Louis, June 17, 1907.
Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine.

ACME CEMENT PLASTER CO.
By Jas. R. Dougan, Sec.

THE SHUART-FULLER CO., Elyria, Ohio.

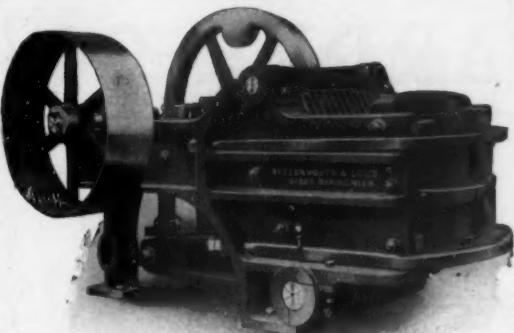


PLYMOUTH PLASTER
WOOD FIBER PLASTER
PLYMOUTH FIREPROOF
PARTITION BLOCKS
PLASTER BOARD
STEEL STUDDING

THE QUALITY BRANDS

WRITE US FOR PRICES AND ADVERTISING MATTER

Plymouth Gypsum Co.
Fort Dodge, Iowa



Nippers—made in 3 sizes.

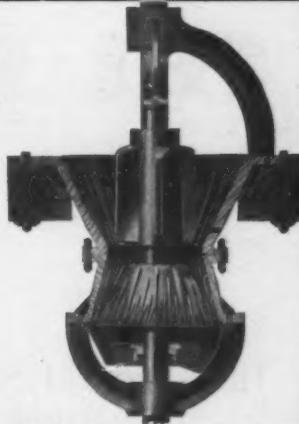
Jaw and Rotary CRUSHERS

For all Rocks and Ores softer than Granite

GYPSUM MACHINERY — We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

Special Crusher-Grinders for Lime

Butterworth & Lowe
17 Huron Street, Grand Rapids, Mich.



Crackers—5 sizes—many variations.

GET THE BEST Finest Line of Gypsum Machinery

MADE

KETTLE CRUSHER NIPPERS

ASK FOR CATALOG OF

MOGUL NIPPERS, OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

McDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.
"Formerly Des Moines Mfg. & Supply Co."

Tell 'em you saw it in ROCK PRODUCTS

PEERLESS

means without an equal and that is what our products are beyond the shadow of a doubt.

Peerless Plaster-Board

The Best on the Market To-day

Peerless Plaster Board has no superior on the market today. Strength, durability, and uniformity in thickness with clean cut edges are its chief virtues.

Peerless Plaster Board finished with Peerless Plaster make a Peerless Wall. Builders' Supply Retailers say it is the best Plaster Board manufactured. If you are "from Missouri" write us today for sample and prices.

— Write today for our —
PEERLESS PROPOSITION

M. A. REEB, : Buffalo, New York



Peerless Cement Plaster
Peerless Wood Fibre Plaster
Peerless Sanded Plaster
Peerless Ready Finish
Peerless Portland Stucco
(Exterior Plastering)

We Ship Mixed Cars
of Plaster and Board

Peerless Plaster Board comes in sheets 32 inches by 36 inches.

Peerless Plaster Board is a fire retardant and an efficient sound deadener.

Peerless Plaster Board is a non-conductor of heat and cold.

Peerless Plaster Board is an insurance against cracks, buckles, and lath strains.

Get in line with
THE PEERLESS LINE
WRITE TODAY

THE NATIONAL RETARDER CO.

Mills at

Webster City, Iowa
Port Clinton, Ohio

Successors to

The Chemical Stucco Retarder Co.
Webster City, Iowa

The Ohio Retarder Co.
Port Clinton, Ohio

The Binns Stucco Retarder Co.
Uhrichsville, Ohio

The same standard quality of retarder will be produced and marketed by the same people at the right price—only a change in name of corporation.

MAIL ORDER TO NEAREST MILL FOR PROMPT SERVICE

Tell 'em you saw it in ROCK PRODUCTS

= NIAGARA =

Wall Plasters Have Greater Covering Capacity, Work Smoother Under the Trowel and Have Greater Final Strength

Niagara Neat Cement

Niagara Sanded Mortar

Niagara Wood Fiber (Wood Pulp)

in 100-lb. Jute Sacks and 50-lb. Rope Paper Sacks. Mixed Car Loads of Wall Plasters, Hydrated Finishing Lime, Plaster Board, Land Plaster and Calcined Plaster for Finishing Purposes. These Products Mean Money to the Dealers in Builders' Supplies. Write today for prices.

NIAGARA GYPSUM COMPANY
BUFFALO, NEW YORK

ATTENTION! ARCHITECTS & DEALERS

"IT SPREADS LIKE BUTTER"

Which? = "Wheeling"

**Why? = { Better Walls
 Best Service
 Right Prices**

We want to make this, our tenth year in business, the biggest and best of all, both for our customers and ourselves mutually. Write us, Results will follow. Our booklet "Better Walls" for the asking.
WILL YOU JOIN THE "WHEELING" FAMILY?

Wheeling Wall Plaster Co., Wheeling, W. Va.

KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Buffalo Branch, CHAS. C. CALKINS, Manager
322 W. Genessee Street.

Robert W. Hunt Jno. J. Cone Jas. C. Hallstead D. W. McNaugher
ROBERT W. HUNT & CO., Engineers
Bureau of Inspection, Tests and Consultation
New York—90 West St. Chicago—1121 The Rookery Pittsburgh—Monongahela Bank Bldg.
London, E. C., Eng.—31 Norfolk House San Francisco—425 Washington St.
Montreal—Can. Exp. Bldg. St. Louis—Syndicate Trust Bldg. Mexico City, Mex.—20 San Francisco St.
Tests and inspection of Cement—Reinforcing Steel and all Cement Materials and
Products—Supervision of Construction and Tests of Concrete Structures—Reports on
Cement Properties and Existing Concrete Structures—Design of Cement Plants and
Inspection of Cement Machinery—Chemical and Physical Testing Laboratories.
"All Manner of Tests on all Classes of Material"

Not the hardest, but the toughest and best Wall Plaster made—Can
be applied with less labor. Has greater covering capacity than any
other similar material

J. B. KING & CO., 17 State Street, New York.

PERFECTION IN BLOCK MAKING
If you wish to attain this you should combine these three important features:
**Wet Process, Face Down,
Damp Curing.**

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincible, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE

THE PETTYJOHN COMPANY
614 North Sixth Street Terre Haute, Indiana

CLINTON METALLIC PAINT CO.

CLINTON, N. Y.
LARGEST AND OLDEST MANUFACTURERS OF
BRICK AND COLORING
MORTAR

Be sure you get the genuine with the "Little Yellow Side-Label"
on each package.

Let us tell you about Side-Walk Black.

Perfection at Last Attained in the Concrete Block Industry

The Perfection Power Block Machine is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure and Great Speed. Machines have been in constant use since July 1st, 1905, with practically no expense for repairs. The machine handles sand, gravel, crushed rock, slag and coloring materials perfectly. All materials accurately measured, thoroughly mixed and uniformly pressed under 200,000 pounds pressure. Makes 8 and 1 $\frac{1}{2}$ x8x24 inch blocks in five faces, and fractional and angle blocks. Machine can be arranged to make Two Piece and Faced Blocks, if desired. All machines delivered set up and put in operation to show a guaranteed capacity of 60 blocks (12x8x24 inch) per hour with five men. Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design. Full details, catalog, testimonials, etc., sent upon request.

THE PERFECTION BLOCK MACHINE CO.
SIOUX FALLS, SOUTH DAKOTA.

It Pays to Advertise in ROCK PRODUCTS



Mr. Bernard L. McNulty,

Francis Publishing Co.,

Chicago, Ill.

Dear Sir:-

In answer to your favor of the 3rd, would state that we have been almost continuous advertisers in Rock Products since the year of 1905 and while not the largest advertisers, we have always felt that the publication paid us handsome returns on the amount expended and we can truly state that the courtesies extended us by the members of your company in the way of write-ups and general help are highly appreciated.

Very truly yours,

CENTURY CEMENT MACHINE CO.

ATB/M

At Bradley

Tell 'em you saw it in ROCK PRODUCTS

SPECIAL NOTICE—"ALL ORDERS ARE ACCEPTED SUBJECT TO DELAY OCCASIONED BY CAUSES BEYOND OUR CONTROL AND WITH THE UNDERSTANDING THAT NO CLAIM FOR DAMAGES OR LOST TIME WILL BE ALLOWED. OUR LIABILITY EXCEEDS OVER \$6000 ARE DELIVERED TO CARRIER."

E. H. RAYMOND, Pres. AND TRAD.

C. M. LAURENCE, V.-Pres. AND Mgr.

P. C. SPRING, Secy.

THE RAYMOND BROS. IMPACT PULVERIZER CO.

ROLLER MILLS, AUTOMATIC PULVERIZERS
VACUUM AND SCREEN SEPARATORS
SPECIAL EXHAUST FANS

TELEPHONE MONROE 1666

CABLE ADDRESS: IMPACT

OFFICE AND WORKS:
520 LAFLIN STREET
1520 W. HARRISON STREET

BROOKLYN, N.Y.
MANUFACTURERS
SWINGHAMMER
PAPER MANUFACTURERS
THE MAGIE, HOLLAND

CHICAGO, May 6, 1910.

Rock Products,

355 Dearborn St.,

Chicago.

Gentlemen:

In reply to your inquiry of May 3rd, we have carefully checked up our records and are pleased to advise that the inquiries we have received as a result of our Ad. in your paper cost us less than from any other high class medium in which we advertise and we have been able to trace some profitable business closed through our advertisement.

Trusting this covers the ground to your satisfaction, we remain,

Yours very truly,

RAYMOND BROS. IMPACT PULVERIZER CO.

C. M. Lawrence
V.P. & Mgr.



PLANT OF A. L. DE SHAZO, MEMPHIS, TENN.

Miracle Pipe and Tile Molds

are used Exclusively at the above plant, which is a

MONEY MAKER

\$15,000 Cleared above all expenses last year

Miracle Molds Spell Success

Wherever Miracle Molds are used, satisfaction always results.

Perfect work is assured. The price is right.

Thousands in use.

Standard molds of every size in stock, and molds for special purposes made promptly to order.

Write for our 28 page Sewer Pipe Catalog or our big Catalog on all lines of machinery.



MARSH COMPANY

971 Old Colony Bldg., Chicago, Ill.



AT last you have an opportunity to start a cement drain tile factory with but a small investment. You can now buy a Schenk Cement Drain Tile Machine with complete equipment for making 4, 5, 6, 8, 10 and 12" tile along with a No. 1 Perfection Mixer and S. & S. Gasoline Engine and all the shafting, belting, hangers, pulleys, etc., necessary to run the plant for the exceedingly low price of \$765.00.

Complete details regarding selling plans with full description of equipment, etc. has been prepared and is awaiting your instructions, so get busy at once, sending us your name and address and we will immediately put you in possession of full particulars regarding our proposition which means a complete cement drain tile plant for \$765.00. Don't forget to mention this publication.

The Cement Tile Machinery Co.

4250-60 Rath Street, Waterloo, Iowa

The Chase Roller Bearing Car FOR CEMENT, BLOCK AND TILE



BOTTOM AND SIDE DUMP CARS, TRANSFER CARS, TURNTABLES, SWITCHES, ETC.

You cannot afford to overlook the necessity of handling your material and product as economically as your competitor. Our goods will help you do this.

WRITE US FOR CATALOG AND PRICES

Chase Foundry Manufacturing Co.
COLUMBUS, OHIO

The Improved Peerless One Man Cement Brick Machine

Equipped with new tamping device, which tamps ten bricks in the machine at one operation, making 12,000 perfectly formed bricks in ten hours. If material be furnished operator and brick taken away.



The superiority of the Peerless Brick Machine was demonstrated conclusively at all of the recent conventions.

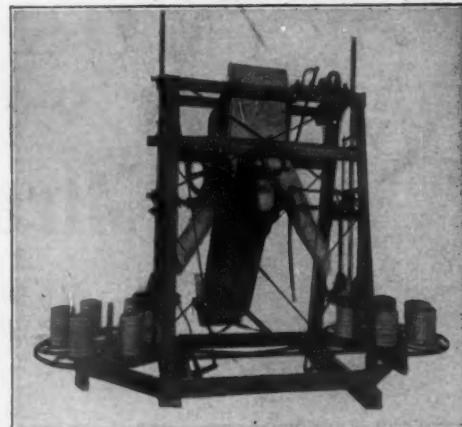
It is the greatest invention in the industry. Simple, strong and durable. Combines all the advantages of every other machine at the smallest cost.

The most successful and most easily operated one-man brick machine ever made.

Write at once for particulars.

Peerless Brick Machine Co.
15 North Sixth St., MINNEAPOLIS, MINN.

THE McCracken Double Tile Machine



The McCracken Double Tile Machine makes all sizes of cement tile from 4 to 18 in. in diameter at the rate of from 10 to 20 tile per minute. Also makes building blocks or construction tile 8x8x16 at the rate of 2000 to 3000 per ten hour day.

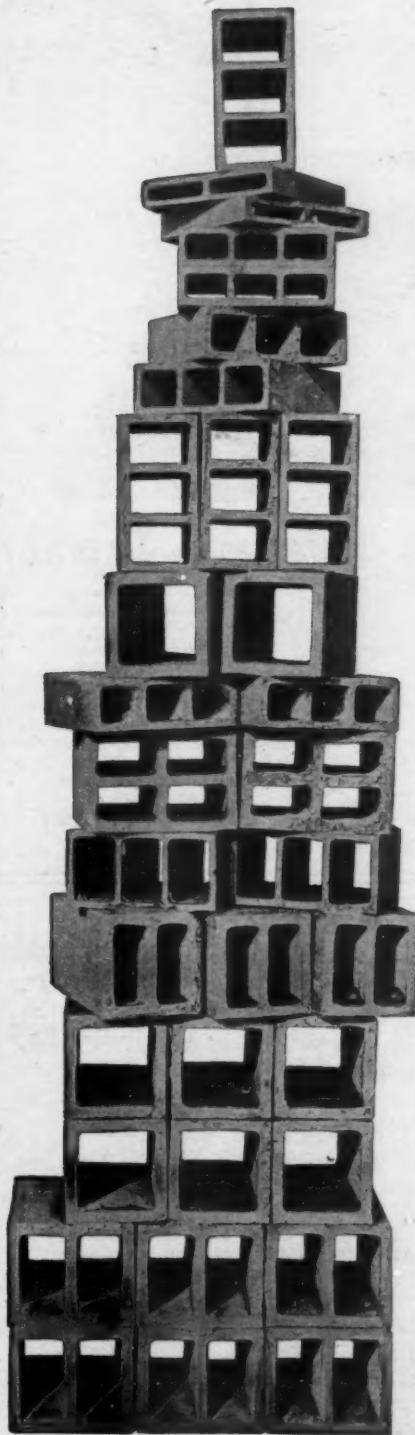
The machine will make two different sizes of tile at the same time or building blocks and tile at the same time, or either end of machine can be used without using the other.

The machine has no cams and runs just as smooth at high speed as when running slow. Taken less labor per 1000 tile than any other machine.

Tile are packed so hard that the large sizes can be carried without the use of pallets. Machine is very simple and strong and runs very light, and elevator can be started and stopped without stopping the machine.

See the McCracken Machine before you buy. Write to

The Sioux City Cement Machinery Company
219 4th Street, SIOUX CITY, IOWA



Our 1910 Catalog

Gives the method of manufacture, fire and compression test data, and the endorsements of local architects and other building authorities. Also many other articles and illustrations of interest to the general public. May we send you, postpaid, a copy of our Catalog?

The Concrete Stone & Sand Co.
Youngstown, Ohio.



Has The First *Pauly* Concrete Tile Plant Been Successful?

This question, which is usually first asked us by interested parties, is best answered by two facts:—1. During the year of 1909, the demand in Youngstown, Ohio, could not be satisfied, and (2) the plants capacity output is sold until the middle of the summer of 1910, in the City of Youngstown alone. In this connection it might be stated also that 4 tiles of our most common size, 8x8x16, can be manufactured from one cubic foot of concrete, with a labor cost of 50 per cent of the cost of concrete anywhere east of the Mississippi.

A weatherproof home of fireproof material can now be built for almost wooden construction cost. These points have been clearly demonstrated in Youngstown by practical use of *Pauly* Concrete Structural and Fireproofing Tile, in a variety of buildings. The result gained has not only been a financial success, but also an enviable position in the estimation of the entire building public.

Persons interested in this practical and profitable phase of the concrete business, are always welcome by the The Concrete Stone & Sand Co., Youngstown, Ohio, where they will be shown every detail of the initial factory.



Tell 'em you saw it in ROCK PRODUCTS

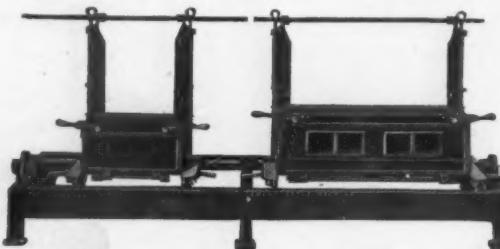
Concrete Building Block

for the simple low cost building and block for the elaborate high class structure may be made on the same block machine —**IF YOU HAVE THE RIGHT ONE.**

To be successful a block manufacturer one should be equipped with a machine that will make anything from an 8 x 8 x 16 block to a 6 foot sill—anything required by the building trade. The only machine that will fill this bill is

The Hercules Block Machine

The HERCULES is built upon one solid frame, 6 feet long. If your demand is just for 8 x 8 x 16 inch blocks you only need the mould box for that size—as your trade increases, add new plates to be attached to your original machine.



No need to buy a complete, new outfit every time you have to add to the variety of your output. There are many other points connected with Hercules machines you ought to know. We have just issued a little book full of information. Send for it to-day.

Century Cement Machine Co.
288-298 St. Paul Street, ROCHESTER, N. Y.

THE GEARLESS CEMENT BRICK MAKER

THE MACHINE YOU WILL EVENTUALLY BUY

It is the most Durable Machine on the Market.

Produces the Most Lasting Cement Brick Made.

Operating Cost is Much Lower than that of other Machines

Has no Cogs to Clog and Wear Out.



No Time or Material Wasted.

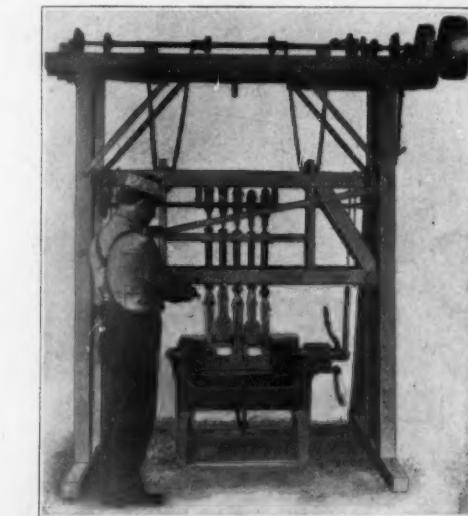
Each Brick is Individually Tamped.

Hopper Returns Surplus to Mixing Box.

Either a Wet or Dry Mix may be used on a Gearless Machine—Wet Mix Advised.

WE GUARANTEE EVERY STATEMENT WE MAKE
SEND FOR CIRCULAR

THE GEARLESS COMPANY
SOLE SELLING AGENTS
17 N. Main St., Gloversville, N. Y.



The Kramer Automatic Tamper

has proven to the many users that it does more to improve the quality of block and reduce the cost than any machine ever put on the market for concrete block making. One of the great features of the Kramer Tamper is its speed. It will strike more blows per minute than twenty-five men can and will tamp a block in ten seconds, so dense, making the consistency so plastic, that more water can be used without sagging the blocks, when withdrawing the cores, and taking them to curing room. This machine will save you from \$8.00 to \$12.00 per day on labor and cement, and the blocks that are tamped in the afternoon are as uniform as those tamped in the morning. Write us to-day for full particulars.

KRAMER AUTOMATIC TAMPER CO.
PEORIA, ILLINOIS

Red, Brown, Buff and Black



MORTAR COLORS

The Strongest and Most Economical in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO.
Chattanooga, Tennessee



The Buckeye Fire Clay Co.
Manufacturers of
Sewer Pipe, Flue Linings, Chimney Tops, Fire Brick, Grate Tile, Ground Fire Clay, Wall Coping, Etc.
UHRICHSVILLE, - - OHO

HIGH GRADE FIRE BRICK

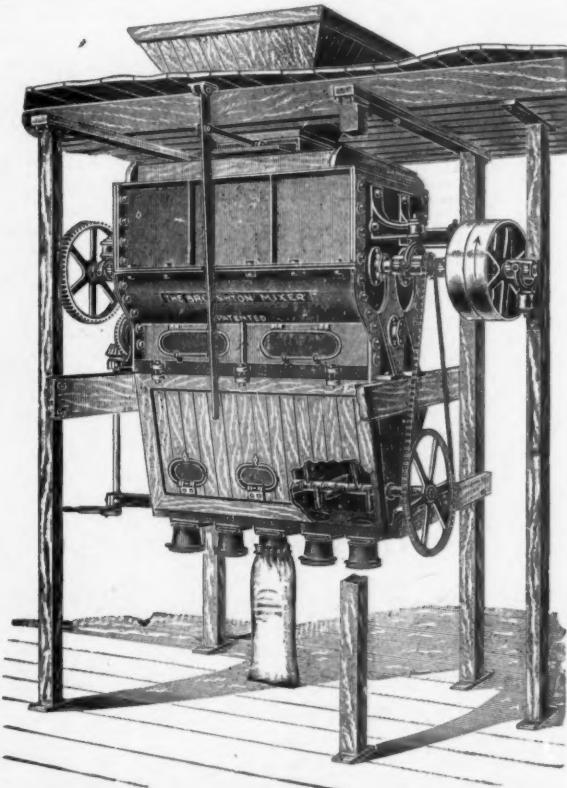
For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description

LOUISVILLE FIRE BRICK WORKS, Incorporated.
Highland Park, Ky., P.O.

Tell 'em you saw it in ROCK PRODUCTS



W



The most thorough and efficient Mixers of Plaster, Cement and Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N.Y.

Make Night Work as Efficient as Day Work

AT A PRICE SO SMALL IT WILL SURPRISE YOU

Powerful automatic, portable, cheap] and reliable, it's accomplished with the

Willson Flare Light

Especially adapted for outdoor construction work, unequaled in efficiency and economy for CONTRACTORS and RAILROAD WORK.

Burns Acetylene gas—the most powerful known illuminant—15 times more powerful than coal gas and in penetrating and diffusive qualities exceeding any other light.

8,000 C. P. for 13 Hours

At 5c per hour

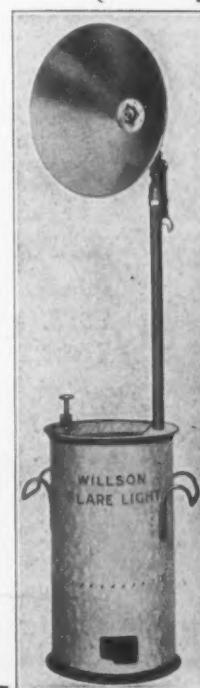
that's the light of a Willson Flare.

Does not smoke, sputter or flicker—it's steady powerful and brilliant.

We want to tell you about it.

CATALOG FREE.

United States Marine Signal Co.
172 Broadway
New York, N.Y.

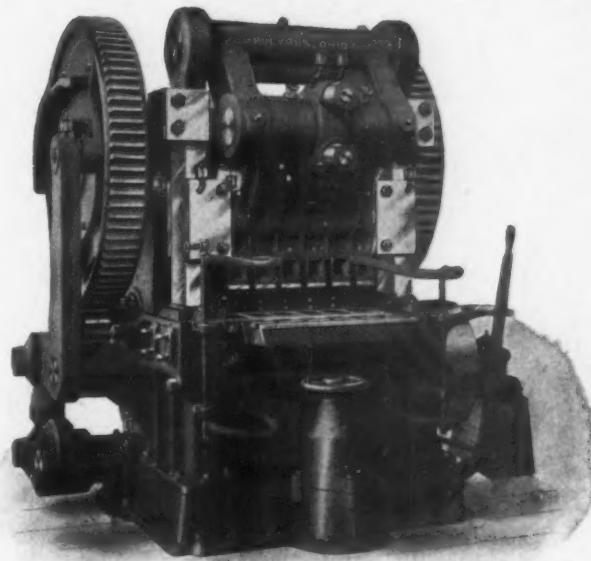


Sand-Lime Brick Machinery

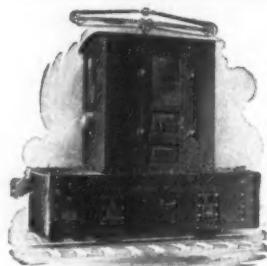
OUR Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We built it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.



THE AMERICAN CLAY MACHINERY CO.
WILLOUGHBY, OHIO, U. S. A.



No. 6550
Electric Industrial Locomotive

THE ATLAS CAR & MFG. CO. CLEVELAND, OHIO

MANUFACTURERS OF CARS FOR
QUARRIES, CEMENT WORKS AND GENERAL
USES. ELECTRIC CARS AND LOCOMOTIVES,
TURNTABLES, SWITCHES, FROGS.



No. 274
End Dump Quarry Car.



No. 805
Dumping Stone Carrier.

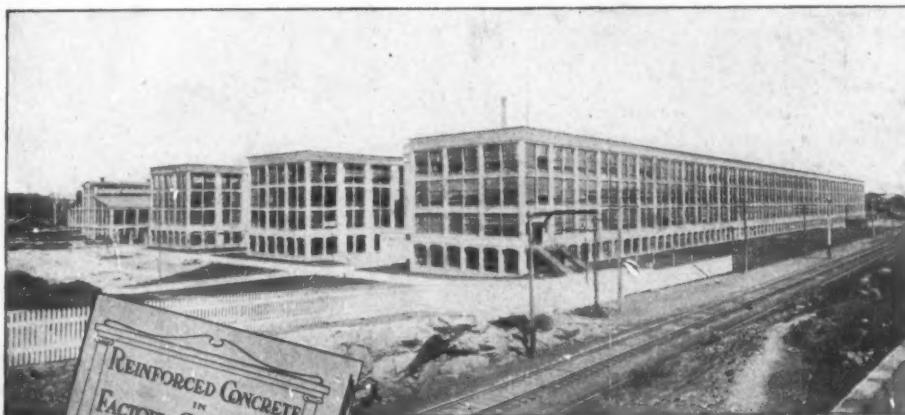
GIANT PORTLAND CEMENT



An unsurpassed record
of 25 years.

Send for our free booklets on Concrete Buildings of Moderate Cost.

American Cement Co. PHILADELPHIA



NONE JUST AS GOOD

THE ATLAS
Dept. U

PORTLAND CEMENT CO.
NEW YORK

Productive capacity over 50,000 bbls. per day—largest in the world

Atlas Portland Cement is
the standard by which all
other makes are measured

ATLAS
PORTLAND CEMENT

used exclusively by the United
States government for the
construction of the Panama Canal

We also make Non-Staining

ATLAS-WHITE
PORTLAND CEMENT

—Send for circular

If your dealer cannot supply
you with ATLAS, write to

Tell 'em you saw it in ROCK PRODUCTS

3477
\$308

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